DOCUMENT RESUME

ED 103 285 SO 008 000

AUTHOR Rotzel, Alice W.; Tenenbaum, A. Bonnie
TITLE Information Processing Theory in Attitude Change Applied to Social Studies Textbook Materials.
SPONS AGENCY Carnegie Corp. of New York, N.Y.
PUB DATE Nov 74
NOTE 100p.; Rotzel's dissertation, "Information Processing Theory Applied to Social Studies Textbook Information," is available from Univ. Microfilms (Order No. 74-27, cited in v35 n6 of Dissertations Abstracts International)

EDRS PRICE MF-$0.76 HC-$4.43 PLUS POSTAGE
DESCRIPTORS Adoption (Ideas); Behavioral Science Research; Bias; *Changing Attitudes; *Concept Formation; Curriculum Evaluation; Educational Research; Measurement Techniques; Research Reviews (Publications); *Social Studies; Social Values; *Student Attitudes; *Textbook Bias; Values

ABSTRACT

This report dealing with the process of attitude change stimulated by social studies material is divided into two parts. Part 1 surveys the literature on attitude formation in four methodological categories: prescriptive teaching strategies; pre/post, quasi-experimental test approach; content analysis; and experimental method approach. Special attention is given to the last two methodologies. The section on content analysis includes matrices to describe five studies on the content of social studies curriculum materials. The section on experimental method in information integration, which seeks to determine the conditions leading to attitude change, concentrates on an analysis of a state adopted textbook dealing with China in order to isolate concrete examples of attitudinal and contextual values. Part 2 of the report describes the application of information integration theory to a study that isolates and quantifies student attitudes influenced by attitudinal and contextual values in social studies materials. The results of this study show that student impressions are functions of the cumulation of value loaded materials. These results underscore the importance of balanced messages in curriculum material and of teaching basic critical skills. The appendixes to the report contain bibliographies and data collected for the study. (JH)

INFORMATION PROCESSING THEORY IN ATTITUDE CHANGE APPLIED TO SOCIAL STUDIES TEXTBOOK MATERIALS[1.]

ALICE W. ROTZEL
A. BONNIE TENENBAUM

STANFORD UNIVERSITY

(THIS PAPER WAS PRESENTED AT THE NATIONAL COUNCIL FOR THE SOCIAL STUDIES, COLLEGE AND UNIVERSITY FACULTY ASSOCIATION MEETING IN CHICAGO, NOVEMBER 27, 1974.)

---

1. This study was funded by the Carnegie Corporation. Requests for reprints should be sent to Dr. Alice W. Rotzel, San Mateo County Office of Education, 333 Main Street, Redwood City, California 94063.

SECTION I

A GENERAL ASSESSMENT OF PRESCRIPTIVE AND EXPERIMENTAL STUDIES IN ATTITUDE DEVELOPMENT RELATED TO SOCIAL STUDIES EDUCATION

This section seeks to illustrate and to assess the extent to which social studies educators and social psychologists have approached and studied the phenomenon of attitude formation and change. Specifically, in this section we report the prescriptive developments and experimental findings which best define the indicators of attitude formation and change. The literature in social studies education is the primary focus of this review because of two underlying assumptions: (1) social studies curricula is instrumental to the transmission of much of the general system of values and generation of attitudes about our society and world community; and (2) teaching strategies adopted by social studies teachers may directly affect the formulation of such attitudes and opinions by the learner.

1

Introduction to Literature

A perusal of social studies methodology textbooks indicates a long and substantial normative tradition of clarifying and evaluating attitudes and values. For example, when teaching attitudes to develop democratic citizenship (Gross and Zeleny, 1958), educators have stressed the need for assessment of personal values (Shaftel and Shaftel, 1967; Raths et al., 1966; Simon et al., 1972) and societal values (Hunt and Metcalf, 1968; Bloom et al., 1971). The 'new' curriculum changes in the 1960's, furthermore, emphasized the social science disciplines and the inquiry learning skills for evaluating decisions and formulating policies principally at the community and societal level (Michaelis and Johnston, 1965; Oliver and Shaver, 1966; Massialas and Cox, 1966; Fenton, 1967; Gross and Muessig (eds.), 1971).

There have been numerous studies in recent years systematically classifying, sorting, and describing attitudinal information in social studies textbooks according to the exclusion and/or inclusions of major themes or key words (Michigan Study, 1973; Fox, 1972; McDiarmid and Pratt, 1971; Banks, 1969). These studies were primarily motivated by the assumption that the content of many textbooks was biased and distorted and that, because textbooks serve as the major instructional tool, they greatly affect the formation of attitudes in school children.

For the past three decades, social psychologists and communications theorists, too, have conducted experiments to investigate which parameters affect the formation and change of attitudes. Some of the important factors identified were:

1. the structure of the information;

   Examples of this area of research concern include various media presentations (Bond, 1940; Berelson, 1942; Hovland, Lumsdaine and Sheffield, 1957; Mitnick and McGinnies, 1958); authority and status of communicator (C.I. Hovland and W. Mandell, 1958; Asch, 1948); incompatible cognition (Kelman and Hovland, 1953); and internal consistency (L. Festinger, 1957).

2. the context in which the information is presented;

   This research approach focused on emotional factors (I.L. Janis and S. Feshbach, 1953; Radelfinger, 1963); reference groups (Kelley and Volkart, 1952; King and Janis, 1956; Siegel and Siegel, 1957); personality impressions (Altman and McGinnies, 1960; Schmidt, 1969); and primacy and recency effects (Anderson and Hovland, 1957; C.I. Hovland, 1957; Byrne et al., 1969).

3. the attitudinal integration of the information.

   Specific empirical procedures were developed for scaling and rating attitudes (Edwards and Kilpatrick, 1948; Hovland and Sherif, 1952) and for observing decision making processes (Shanteau, 1970a, b).

In general, these researchers attempted to determine whether, and to what extent (a) a specific kind of communication influenced the formation of attitudes; (b) the subject's predisposition influenced attitude change; and (c) the conditions of the persuasive information affect attitude change. More recently, many theorists have begun to explore how psychological processes of cognition (e.g., cognitive consistency, imbalance, congruity, contrast dissonance) are related to attitude change and learning theory (Feather, 1964, 1967; Tannenbaum, 1967; Sherif and Hovland, 1961; Sherif, Sherif and Nebergall, 1965).

Paralleling the prescriptive-descriptive writings of the social studies educators, other curriculum researchers have tested certain treatment effects of curriculum materials, specifically the structural presentation effects of curricular materials. A classic example is Bond's 1940 study in which he manipulated materials in a genetics course in an attempt to influence attitude change toward national groups, race, and imperialism (recall that this study was done in 1940). He found that by emphasizing authoritative generalizations about people from the subject matter of genetics, he could produce greater understanding of the generalizations and also induce positive attitude change toward national groups, race, and imperialism. On the other hand, other studies (e.g., Williams, 1948; Stevenson, 1955; Lagey, 1956) have shown that the content of a course does not guarantee that students' attitudes will change on the topics being studied. Thus, the evidence for attitude change as a function of treatment effects has been inconclusive; and the choice of teaching strategies for influencing positive attitudes remains unclear.

While much of the work by social psychologists and curriculum researchers has been based on the assumption that the information a learner encounters is the primary determinant of attitude formation, recent studies in information integration have postulated that the evaluative load of information (the value of favorableness of the information) is the crucial factor (e.g., Osgood and Tannenbaum, 1955; Abelson and Rosenberg, 1958; Fishbein and Hunter, 1964; and N.H. Anderson, 1969). The information integration theorists postulate that attitudes (or more appropriately, impressions) ordinarily result from an accumulation of evaluative information and evidence. This simple, but fundamental fact, they claim, is illustrated by reflecting on the development and change, over a period of time, of one's impression/attitude toward particular friends or toward one's job. The same holds for opinions about political figures or about social problems such as conservation, bussing, and drugs. More precisely,

> Information stimuli continually impinge on the person, in life or in the laboratory, and he must integrate them with one another as well as with his prior opinions and attitudes. (For example), social judgments are typically based on a cumulation of various pieces of information, sometimes of the most diverse nature. Factual and hearsay evidence, rumors, prestige associations, gestures and appearance, may all bear on the final attitude. Information integration is thus fundamental in attitude change (Anderson, 1970b).

One of the most cogent and comprehensive experimental approaches for analyzing the process by which information is integrated has evolved from the work by N.H. Anderson (1968a, 1972). For the past ten years, he has studied the conditions under which information is accepted or rejected and the effects of context factors on attitude impression formation. His theoretical work ranges from personality impression (Anderson, 1965a), including studies of heterogeneous stimuli (Lampel and Anderson, 1968), primacy effects (Anderson, 1965a), serial presentation (Anderson, 1968b, 1973b), set-size effect (Anderson, 1967), stimulus inconsistency and discounting (Anderson and Jacobson, 1965), and averaging versus adding model (Anderson, 1965b, 1968a), to work in psychophysical judgments (Weiss and Anderson, 1969), decision making (Shanteau and Anderson, 1969), learning (Anderson and Hubert, 1963; Anderson, 1969), and attitude change (Sawyer and Anderson, 1971; Anderson, 1973a).

Information integration theory hypothesizes that (1) the attitudinal value of the message can be defined by two parameters, its scale value and its weight value. The scale value reflects the position of the message on a scale of judgment, indicating its degree of favorableness or unfavorableness. Varying degrees of favorableness may be assessed according to the range of the scale. For example, a message may be judged to be highly favorable, moderately favorable, moderately unfavorable, or highly unfavorable, using a four-point scale for the judgments.

The weight value, on the other hand, reflects the value on a scale of judgment of the source or context in which the message is presented. Varying degrees of appropriateness of the source of message may be assessed according to the range of the scale. For example, the source of the message may be judged to be highly reliable (factual) or highly unreliable (subjective), using a four-point scale; and

(2) there are specific rules to define how information within and between messages is integrated to form an overall impression. Anderson offers two rules for information integration. The first rule states that the favorableness of the messages (scale value) are added together to form a general impression. This model, called the adding model, assumes that the value of the sources (weight value) is recognized but is not used in forming the general impression. The following equation represents this model:

$$R = C + w_i + s_i$$

where R is the resultant general impression, C is a constant that may or may not represent the subjects' attitudinal predisposition, w_i is the weight value of the source (equal to zero), and s_i is the scale value for degree of favorableness of the message.

The second rule states that the favorableness of the message (scale value) and the favorableness of the source (weight value) are weighted or averaged to form the general impression. This model is called the averaging model and is represented in the following equation:

$$R = C + w_i \; s_i/w_i$$

when R, the resultant general impression, is mathematically equivalent to the sum of the products of the weight taimes scale values divided by the sum of the weights.

Most of Anderson's experiments seek to distinguish whether the subject is (a) adding the scale values or (b) averaging them. To explain this relationship between scale and weight values, Anderson provides a linear model as follows:

$$R = C + w_i \; s_i$$

where R is the judgment response, C is a constant, and w_i and s_i are the weight and scale value of the ith message in a set (Anderson, 1968a, 1970).

The work of Anderson and others in information integration offers one of the most promising and appropriate research approaches for the curriculum researcher.

2
Illustration of Prescriptive and Experimental Studies

In reviewing the literature, there appear to be four distinct methodologies for studying attitude formation: (1) development of prescriptive teaching strategies; (2) content analyses to raise issues about the existence and pervasiveness of negative social attitudes present in social studies textbooks; (3) pre post, quasi-experimental tests to assess the effects of structure and context of information on attitude change; and (4) experimental designs to test attitudinal integration of information.

Prescriptive Teaching Studies. The most voluminous category of publications in social studies education pertinent to attitude development and change is composed of methodology textbooks which seek to guide the teacher in identifying appropriate instructional objectives (Bloom, 1971); approaches to subject matter disciplines (Krug et al., 1970; Morrissett, 1967); selection of curriculum materials (Krug, 1970; Fenton, 1967; Hunt and Metcalf, 1968; Oliver and Shaver, 1966); and instructional techniques (Raths et al., 1964; Shaftel and Shaftel, 1967; Simon, 1972) Such methodologies are directed toward the attainment of democratic citizenship competencies, personal value clarification, and reflective thinking. The intent of such methodologies is to "develop attitudes of respect for the world and dignity of the individual as a human being, of social and civic responsibility, and of respect for truth and logical means of arriving at conclusions" (in Gross and Zeleny, 1958).

The evaluation of attitudinal change is also presented using prescriptive techniques (e.g., use of observation, pencil and paper inventories, socio-drama, etc.). Several books refer to general research findings which support some of their prescriptions. For example, Raths (1966) reviews numerous treatment and survey studies which used value clarification, directive counseling, or role playing techniques. However, the process of attitude formation was only considered in terms of descriptive procedures rather than the actual content of the information.

Essentially, the standard social studies teaching methodology texts have reflected the studies of attitude development and change in social psychology and other relevant fields of study; however, they have not suggested systematic approaches for teachers to evaluate the effects of teaching methods and materials.

Content Analysis. Content analysis is a popular form of curriculum research in social studies education. The factual content of social studies curricula has been a continuing concern of content specialists in the various subject areas, while the effect of presenting materials has been the concern of the communications expert and, of course, of the teacher as the prime communicator in the classroom. Research in content analyses has combined these concerns and investigated the interaction between content and communications and how it affects the determinants of the learner's attitudes.

In Table i, a review of the methodologies of five content analysis studies of social studies materials is provided. These studies were selected as representative examples of social studies analysts' attempts to supply evidence of negative attitudes or the nonappearance of positive social attitudes in textbooks and to identify the determinants of attitudinal effects.

Insert Table i

Table ii provides this author's assessment of the usefulness and effectiveness of these studies for identifying the context of the communication and their possible effects. Each study has been analyzed using the following assessment indicators.

TABLE 1.

STUDIES USING CONTENT ANALYSIS METHODOLOGY FOR DESCRIPTION OF CONTENT IN SOCIAL STUDIES MATERIALS

COMPONENTS OF CONTENT ANALYSIS METHODOLOGY	CONTENT ANALYSES OF SOCIAL STUDIES MATERIALS				
	California Task Force to Reevaluate Social Science Textbooks, Report and Recommendations (1971)	Banks (1969) Content Analysis of the Black American in Textbooks	Fox(1972) The Treatment of Social Conflict in Social Studies Textbooks	McDiarmid & Pratt (1971) Study #A: The Treatment of Critical Issues	McDiarmid & Pratt (1971) Study #B: The Treatment of Groups
I UNIT OF ANALYSIS	Word Counts/Number of omissions contained in complete text	Theme/Major idea contained in a sentence	Theme/Major Idea Contained in paragraph	Complete Section/Chapter contained in a textbook	Theme/Major Idea contained in a sentence
II SELECTION PROCEDURES	Preselected by State Textbook Commission No sampling procedure used/ personal preference of content specialist	Sample based on grade levels, publication dates, and preselected criteria	Sample based on State adoptions, grade levels, & geographical regions	Sample based on subject matter, State authorized texts, and preselected criteria	Sample based on grade, subject matter & preselected criteria
III CONTENT CATEGORIES	Treatment of Role and Contribution of Asian Americans, American Indians, Black Americans, Mexican/ Spanish speaking Americans, and other groups	Treatment of Black Americans according to eleven theme categories	Treatment of social interaction and 4 categories of social conflict issues in the U.S.	Treatment of eleven critical social studies issues with some sub- issues nested within	Treatment of six groups of people: Christians, Jews, Moslems, Negroes, Indians, and immigrants
IV EVALUATIVE LOADING	Analysis identifies: Negative terminology Negative Anglo biases Positive ethnic images	Negative information related to discrimination, stereotypes, & prejudice categories Positive information related to racial harmony, achievement	Author's attitude toward: Favorableness of social conflict factors; and Unfavorableness of social conflict factors	Not present	Groups assessed on a 7 point scale (+3 to -3) on highly favorable to highly unfavorable information
V SUPPORTIVE EVIDENCE	Analysis identifies: Distortions (myths) Contradictory assertions Misleading scholarship Omissions of hist. inform.	Not present	Not directly present	Analysis identifies (on a 1 to 3 scale from good- fair- to poor) INCLUSION (presence of an issue), VALIDITY (accurateness & [illegible]ity), COMPREHENSIVENESS [illegible] of facts), BALANCE (unbiased hist. perspect.), CONCRETENESS (objective, factual, realistic)	Not directly present
VI DATA ANALYSIS	No statistical tests Subjective critical commentary	Validity & reliability tests for coding procedures Chi-square analysis on single dependent measure	Several coder reliability tests Chi-square analysis on several dependent measures	No statistical test reported Percentage scores	Evaluative Assertion Analysis (Pratt, 1971) Analysis of Variance
VII INFERENCES & RECOMMENDATIONS	Task Force concluded textbooks are discriminatory & ethnocentric in both framework and content, and therefore not in compliance with California State Education Codes. General guidelines for publishers of Social Studies textbooks	Demonstrates frequency of theme units. Author infers from findings that the lack of high frequency scores within many of the theme categories reflects (1) need to provide more realistic information on racial attitudes, (2) such information will provide inform. about the 'full significance of the Black experience in America', (3) authors tend to avoid moral issues of racial discrimination & prejudice	Provides frequency of theme units. Author infers that exclusion of social interaction issues and the more neutral treatment of social conflict issues contribute little or nothing toward political socialization Identifies kinds of social interaction & social conflict treatments for Curriculum Development	More texts were found to omit the issues categories & a higher percentage received an overall assessment of 'poor' Need for more issues to be present in Curriculum materials	Significant finding between groups. In general Christians, Jews, Immigrants & Moslems received positive treatment, with Moslems ranking lowest. Teacher training Methodology to assess textbooks and other materials

I -- descriptive power of the unit (e.g., key work, themes);

II -- representativeness of the material (e.g., sampling procedure);

III -- descriptive power of the content categories (e.g., treatments);

IV -- evaluative loading of the information unit (e.g., positive/negative);

V -- supportive evidence of the information unit (e.g., factual/subjective);

VI -- inferential power of the data analysis results; and

VII -- appropriateness of inferences and recommendations based on the analysis.

Insert Table ii

Based on Tables i and ii, the following conclusions are proposed:

I. Descriptive Power of the Unit. Content analyses seek to classify content as systematically as possible. The purpose is to describe the values and connotations of the message contained in each unit of analysis.

A content analysis technique which includes the context in which main concepts are presented as part of the unit of analysis will presumably have more descriptive power than those that do not. For example, the California Task Force Report (1971) uses key words (e.g., Asian Americans, race) as the unit of analysis.[1] These key words, however, are not systematically selected, nor do they include the context within which they are used. The Banks study (1969) uses themes (e.g., discrimination) as the unit of analysis, selected by a systematic procedure; however, it does not classify these themes using the context provided within the textbook chapters. The Fox (1972) and McDiarmid and Pratt (1971) studies, on the other hand, were more context-oriented, since complete paragraphs and complete textbooks, respectively, rather than single words or phrases, were used as the unit of analysis.

II. Representativeness of Materials Used. All of the content analysis studies applied an objective and comprehensive system for selecting materials, with the exception of the California Task Force study. Ideally, a sampling procedure should be applied to obtain a representative sample of social studies

[1]It should be noted that the California Task Force Report is not under negative criticism in this review. One author, a former member, clearly realizes the constraints of time and purpose under which this group had to operate. This Report is included only to permit comparisons between various content analysis procedures.

TABLE 11. An Assessment of Content Analysis Studies on Social Studies Materials

Indicators for Assessment of Content Analysis Methodology	Content Analysis of Social Studies Materials					SCORING PROCEDURE (YES-Indicator present; & NO-Indicator not present)
	California Task Force 1971	Banks (1969)	Fox (1972)	Study #A McDiarmid/Pratt (1971)	Study # B McDiarmid/Pratt (1971)	
I Descriptive Power of the Unit Used	YES-- 0	YES-- 0	YES-- 1	YES-- 1	YES-- 1	0 = Units Analyzed Out of Context 1 = Units Analyzed Within Context
II Representativeness of the Materials Used	YES-- 0	YES-- 1	YES-- 1	YES-- 1	YES-- 1	0 = No Objective-comprehensive System for Selecting Material
III Descriptive Power of the Content Categories Used	YES-- 0	YES-- 0	YES-- 0	YES-- 0	YES-- 0	0 = Categories were Selected Out of Context 1 = Categories were Selected Within Context
IV Evaluative Loading of Information (Positive/Nagative)	YES-- 0	YES-- 0	YES-- 1	NO--	YES-- 1	0 = No Objective-comprehensive System for Assessing Evaluative Load 1 = An Objective-comprehensive System for Assessing Evaluative Load
V Supportive Evidence (Judgemental/ Factual)	YES-- 0	NO--	NO--	YES-- 1	NO--	0 = No Objective-comprehensive System for Assessing the Quality of Evidence 1 = An Objective-comprehensive System for Assessing the Quality of Evidence
VI Inferential Power of the Data Analysis Results	NO--	YES-- 1	YES-- 1	YES-- 1	YES-- 1	0 = No Appropriate System for the Analysis of the Data 1 = An Appropriate System for the Analysis of the Data
VII Appropriateness of the Inference & Recommendations	YES-- 0	YES-- 0	YES-- 0	YES-- 1	YES-- 1	0 = Inferences and Interpretation are not Guaranteed/ nor are Recommendations 1 = Inferences and Interpretation are Guaranteed/as well as Recommendations

materials to be analyzed. This procedure may guarantee the generalizability of the findings to other social studies texts. For example, Fox and McDiarmid and Pratt used a sampling procedure to select social studies textbooks which were on state-adopted lists. Preselected criteria, however, were used to select units within the textbooks.

III. Descriptive Power of the Content Categories. Most of these studies use only a priori criteria to determine the categories to be used for the content analysis. This procedure generally excludes from the analysis information that does not fit these categories. The investigators using this procedure obviously assumed that such information would have no effect on the results and interpretation of the content analysis.

IV. Evaluative Loading of the Information. One of the most important aspects upon which the content analysis should focus is the amount of positive (favorable) or negative information presented in the unit of analysis. The authors believe this is a crucial indicator which should be studied in order to answer the questions posed for these studies. The majority of the researchers have obscured or embedded this indicator in other variables such as content (i.e., treatments). Only Fox and McDiarmid and Pratt (Study #B) attempt to isolate this indicator explicitly. Fox assesses whether or not the textbook authors' opinions toward social conflict factors are favorable; and McDiarmid and Pratt apply a sophisticated evaluative assertion analysis to determine the presence of favorable sentences in each content category.

V. Supportive Evidence for the Information. Another indicator upon which content analysis studies should center is the qualitative relevance of the information presented in each unit. This quality could be operationally defined by the degree of objectivity or subjectivity of the source of information (e.g., factual or judgmental information). Only McDiarmid and Pratt (Study #A) attempt to assess this kind of supportive evidence. They use five categories of criteria (e.g., validity--accurateness, unambiquity; concreteness--objectivity, factual, realistic; etc.) to determine how well the textbook material fit their standards.

VI. Inferential Power of the Data Analysis Results. Since most of these studies use some type of statistical technique for data analysis, it is important to determine the types of inferences that the results of these analyses do or do not guarantee. Two main statistical models are used, namely, chi-square and analysis of variance. Chi-square analysis, appropriate for the analysis of frequency data, is useful to identify globally significant differences between content categories used in the studies. However, unless specific chi-square techniques for partitioning the variance are used, the common chi-square analysis does not permit comparisons among specific categories. For example, if a study uses the following categories in the content analysis: (a) Christians, (b) Jews, and (c) Moslems; a chi-square test of significance will allow us to infer that the differences between categories a, b, and c are statistically significant. However, it will not give us information necessary to answer the following questions:

(1) is 'a' significantly greater than 'b'?;

(2) is 'a' significantly greater than 'c'?; and

(3) is 'c' significantly greater than 'b'?

Banks uses chi-square analysis to test that the frequency of "racial violence and conflict" will be significantly greater than for "racial harmony." However, in his study, there are eleven categories.

One-way analysis of variance is another statistical procedure commonly used in these studies. This procedure is useful to test the statistical significance of both global and specific comparisons. Furthermore, factorial analysis of variance, using principles of experimental design, permits tests for statistical significance of combinations of factors or categories (interactions). These significance tests are based not on total or partial frequencies, but on frequency or percentage means, computed by dividing the frequency within a given category by the number of categories.[2] Fox and McDiarmid and Pratt, Study #B, apparently used one-way analysis of variance. Fox compared differences between grades and social conflict categories. One of his conclusions was that there is a significantly higher frequency of social conflict issues in fifth grade textbooks than in third grade or ninth grade books. McDiarmid and Pratt used evaluative assertion formulas to generate their mean raw scores. They then applied analysis of variance to compare whether or not there were statistically significant differences between treatments, textbooks, grade levels, subject matter, publishers, date of publications, language, sex of author, and number of authors. They found differences between treatments and textbooks.

VII. Appropriateness of Inferences and Recommendations. In making inferences, most of these studies overlooked both the limitations of content analysis as a technique and the limitations of the statistical procedures used in the data analysis. In his review of content analysis studies, Berelson (1954) stated that "the effects of communication cannot be inferred directly from the attributes of content ('what') or style ('how') without independent validation." On the other hand, inferences based on the results of the study cannot be drawn beyond what is guaranteed by the statistical procedures. In order to assess the appropriateness of conclusions and recommendations, the following questions may be asked:

(1) Are the units of analysis randomly selected so that generalizability will be guaranteed?

(2) Are the scoring procedures for quantifying the data reliable?

(3) Is there any information regarding the construct validity of the categories used in the content analysis?

---

[2]For a detailed explanation of the type of comparisons used with analysis of variance, see Part 3 in this section.

(4) Are the statistical procedures used appropriate for the kind of data collected?

(5) Are the comparisons between categories/treatments statistically independent?

(6) Are the levels of statistical significance appropriate?

(7) Are the inferences based on comparisons allowed by data analysis procedures?

To fulfull Berelson's validity requirement, it seems necessary to use further experimentation for validating the results obtained by content analysis techniques.

Pre Post, Quasi-experimental Test Approach.[3] The objective of most curriculum researchers, using the pre/post test approach, has been to investigate some of the structural factors of curricula materials which are thought to affect attitude change. The basic methodological assumption is that attitude change can be attributed to the effects of content stimuli by measuring a student's predispositions on a pre test and the effects of treatment presentation on a posttest. For purposes of illustration, two typical curriculum studies will be reviewed.

Fisher (1968) was interested in looking at the influences of reading and discussion on fifth graders' attitudes toward American Indians. He tested a null hypothesis that persuasive communication in reading materials of a literary nature would effect no change on childrens' attitudes toward American Indians. Also, he hypothesized that the predisposition of the students would not influence an attitudinal change. The design controlled for a subject factor (socioeconomic background) and two treatment factors (groups and reading materials). There were three treatment groups: experimental group #1 (reading only), experimental group #2 (reading plus discussion), and a control group (no reading or discussion). Students were pretested on an attitude information test to determine whether, and to what extent, they were prejudiced toward American Indians. Students, by classrooms, were assigned to treatment conditions. Over a three-week period, the experimental groups read six selections. At the end of the study, the three groups were given the same attitude information test as a post test. The researcher concluded that the null hypothesis had to be rejected. Significant reductions in prejudice, as measured by the attitude information test, were produced in both experimental groups, the groups that had read the six literary readings. The predisposition of the students had no bearing on the reduction in prejudice which was attributed to the kind of experimental treatment. The group with reading and discussion showed more

---

[3]Donald Campbell and Julian Stanley (1963) use this term to describe experimental designs which lack optimal control but are worth undertaking where better designs are impossible (71).

change in attitude than reading alone.

Litcher and Johnson (1969) conducted a similar study on attitude change associated with the use of multiethnic readers. They hypothesized that the persuasive communication in multiethnic readers, which associated Negro with a positive response identified with 'middle class' characteristics, would have no change effect on children's attitudes toward Black Americans. The researchers manipulated two treatment groups: the experimental group (with multiethnic readers) and the control group (with regular readers). The experimental procedures required students to be interviewed individually in order to be given four pre tests (i.e., Clark Doll Test, Show Me, Categories Test, and Direct Comparisons Test). The experimental group used the multiethnic readers for four months in a normal classroom setting, while the control group used the regular readers. The posttest was administered at the end of the study, using the same attitude tests and procedures as in the pretest. Based on the results of the post tests, students of the experimental group responded with a more favorable statistically significant frequency toward Negroes than the control group. The authors concluded that their counter-condition hypothesis was supported and that the social perception and social learning hypotheses were rejected. That is, they claim that increased visibility of ethnic minority groups in reading materials would reduce prejudice and increase racial harmony.

In an attempt to assess the appropriateness of the pre/post, quasi-experimental test approach, it seems quite evident that these kinds of studies can only ask if the experimental treatments affect the subjects' attitudes. Studies like this usually find that some degree of negativism, as measured by the attitude test, is reduced and that such a reduction in negativism is not related to predisposition but to the kind of experimental treatment. Long-term effects are rarely found. The actual experimental conditions in terms of the newness of the materials, the exclusiveness of the study, the lack of control of some of the more complex contextual factors contained in materials (e.g., the lack of control of the effects of positive and negative loading of information) point to the limitations of such pre/post test studies. No attempt is made to isolate those factors which may actually account for what and how information is processed which cause an attitude to change or be modified, especially over time. In addition, the statistical tests based on correlation coefficients have been criticized, since high correlations between model and data are typically built into the stimulus design (Sidowski and Anderson, 1967).

Experimental Method Approach. A different research objective is applied for experimental work in information integration. In this case, the researcher seeks to determine the conditions under which information is processed (e.g., how the subject combines messages to form an overall impression). The methodological assumption is that the effects of information on attitude formation can be explained by manipulating the evaluative load of information (i.e., the degree of favorableness), order, and other contextual factors by using factorial designs, procedures of functional measurement, and analysis of variance (Anderson, 1970a).

While no previous studies have been conducted by curriculum researchers applying integration theory, there are two particular studies done by social psychologists which lend themselves to curricular concerns. Anderson (1973a) applied information integration theory to identify how subjects form attitudes about U.S. Presidents. He assumes that attitudes develop and change as a person

receives new information and integrates it with his current attitude. To test this, he manipulated two major stimuli which were thought to account for how a person evaluates and processes information. These factors are: (1) the attitudinal value or evaluative load of a message according to its degree of favorableness; and (2) its significant source or contextual load of information (e.g., degree of favorableness of the amount and reliability of the message). In this study, a factorial design was used to control only factual information about eight U.S. Presidents and the serial order of the evaluative loads (e.g., H+H+H+H+, H-H-H-H-, L+L+L+L+, L-,L-,L-,L-, denoting highly favorable, moderately favorable, moderately unfavorable, and highly unfavorable attitudinal values).

Subjects were instructed to rate each President (on a ten-point scale) on his general qualities of statesmanship and how well he did his job. A simple additive model was hypothesized to account for the effect of the evaluative loads (favorable/unfavorable) on the subjects' impression ratings and the non-interaction effects of the contextual loads (amount and order of evaluative messages).

Analyses of variance were run, and the statistically significant results supported the integration model. Anderson, therefore, postulated that a subject's impressions are a function of the build-up or accumulation of favorable messages. That is, the addition of the amount of favorable information will increase the favorableness of the response, and such contextual factors as order and importance of the information are independent of the evaluative loads and thus will not interact with them.

Kaplan and Kemmerick (1972) ran a study concerning juror judgments using the information integration model. In this experiment, simulated jurors were asked to give ratings of guilt and punishment for eight traffic felony cases which varied in type of evidence (e.g., evidential information which pertained directly to the alleged crime; and non-evidential information which related to the defendent's personal characteristics). According to information integration theory, a subject must combine or integrate the information components into a unitary stimulus value (e.g., the defendent's likableness). Consider the experimental task of the juror. He or she was provided with a message giving information about an alleged crime. Similar to the positive and negative stimuli presented in the U.S. President study (Anderson, 1973a), in this case, each message has a value on the dimension of guiltiness which had to be combined to make a judgment.

The evaluative load again was found to function linearly and to combine noninteractively with types of evidence. That is, a negatively evaluated defendent will bias judgments against himself whether the evidence is incriminating or exonerating, and to the same extent. The reverse also held for positively evaluated defendants.

The outcomes of these two experimental studies are very suggestive. First, they demonstrate that a simple additive model can account for a moderately complex cognitive process. Secondly, the fact that certain contextual factors did not interact with the linear function of the evaluative load further isolates and emphasizes the importance of looking at the evaluative load of messages for determining impression formation. And third, the stimulus judgments, particularly those found in the U.S. President study, are reasonably similar to social studies materials. This kind of laboratory work has direct implications for practical school problems of teaching and learning.

3

Information Analysis Procedure for Social Studies Materials

The research evidence presented by information integration theorists provides an exciting and promising approach to be used in the study of the effects of social studies textbook materials upon the learner. The authors planned a two-stage approach to empirically test the effects of written social studies materials upon impression formation. In the first stage, an information analysis technique[1] was developed to isolate the factors which identify the kinds of evaluative load and contextual load which are contained in printed instructional material. In the second stage, an experimental study on the effects of these contextual factors upon impression formation was conducted to test the relevance of an application of the adding model postulated by Anderson (1972a) to social studies curriculum materials. A description of the information analysis' findings will be briefly reported in this chapter.

Introduction. Using a classificatory technique devised by one of the authors in the spring of 1972, four information analysis studies have been conducted. The objectives of these studies were:

(1) to analyze objectively and systematically a unit of information within its message context;

(2) to select general content categories which subsume all message units in a section of the textbook;

(3) to classify all message units according to its evaluative load (e.g., positive, negative attitudinal values), type of content categories, and supportive evidence (judgmental/factual);

(4) to apply factorial analysis of variance to test significant differences between contextual factors and to identify order effects of message units; and consequently,

(5) to provide the means for generating hypotheses about the possible effects of content parameters on the learner's attitude formation.

One of the replicated studies on Voices of Emerging Nations will be reported here.[2] The China section, consisting of twenty-four chapters, was

---

[1]This label is applied to eliminate confusion with the other content analyses reported in Section I.

[2]This California State adopted textbook is a Leswing Communications publication (1971), and it is presently in the State Suggested List of Textbooks.

analyzed in its entirety. This seventh grade social studies textbook (used also in ninth and tenth grade courses) was one of two which were selected based on a survey of six county offices of education in the local area to determine which textbooks were more frequently used in world civilization and world problems courses.[3]

The information analysis scheme was devised to identify the key factors which are said to account for how information is integrated. It was decided that each message unit would be analyzed according to (1) its evaluative load (neutral, negative, and positive values); (2) its supportive evidence (factual, judgmental, misleading); its type of content (social practices, politics-government, history-culture, and geographic-economics); and its order of presentation as organized by chapters.

Procedures. The general procedures first require that the purpose of the study should be identified. Then, each message element of information should be identified. And subsequently, each element should be classified within three categories: the Evaluative Load, the Supportive Evidence, and the Type of Content, all according to the order of each chapter. Each part of the process is defined below:

A. Defining the Domain of the Analysis

> Before beginning the analysis, it is necessary to carefully define the range of student attitudes the study is intended to tap. For example, if the study is centered on the students' attitudes toward other cultures, the particular aspects of these cultures under study will need to be well defined. In the China example given here, the study concerns the students' general attitudes toward the Chinese Communist society; and more specifically, with aspects of Chinese social practices, politics, and beliefs.

B. Identifying the Information

> An element of analysis is defined as an assertion or statement. It may be either a simple sentence (i.e., subject and predicate) or a part of a compound sentence which relates a proposition, an idea, an issue, an argument, etc. to the specific domain of the study.

C. Classifying the Information

> 1. The Evaluative Load is specifically defined as:
>
> H positive information: information which has a favorable value in

---

[3]The other textbook was Afro-Asian Regional Studies, Allyn and Bacon, Inc. (1970), sections on AFRICA: SOUTH OF THE SAHARA; and EAST ASIA: CHINA, JAPAN, KOREA. This text is used in grades ten through twelve.

the American society; words and their associates which are written within a favorable context for the student (i.e., words of either positive or negative value which are given as favorable information within the context of the material); and statements or questions which call for a favorable response;

L negative information: values unacceptable or questionable in the American society; words with unfavorable connotations or within an unfavorable context; and statements or questions which call for an unfavorable response; and

N neutral information: information which cannot be classified as either favorable or unfavorable; information or a task which requires noncommital judgments; transitional or connective statement(s) which lead the reader into a state of indifference; and information which provides the learner with no choice or interpretation, either positive or negative.

For an example of elements of information which are classified according to the Evaluative Load, see Passage 1 and Table A for an explanation of this task.

Insert Passage 1

Insert Table A

---

2. The Supportive Evidence is specifically defined as:

F factual statements: information based on objective observation empirically verifiable (e.g., statistical data, references to dates, names, and sources of information);

J judgmental statements: information based on subjective opinion which is difficult to verify empirically (e.g., value statements, causal inferences, etc.); and

M misleading statements: misuse of factual or judgmental statements by providing one-sided arguments, selected contexts in which incidences are presented or neglected, ambiguous statements (e.g., contrived dialogue within an authentic situation), and inaccurate information.

In Table A, the Supportive Evidence indicator for each element of the analysis is identified as factual statement (F), judgmental statement (J), or misleading statement (M).

UNIT XIII

PASSAGE 1

China was a land of peasants. The average amount of land per peasant before the Communist revolution was less than four acres. Peasants used farming techniques and tools that were centuries old. Peasants' wives pulled the plows. All planting and harvesting was done by hand. Only the richest Chinese family could afford to own animals to help them work or to provide food. Animals ate more grain than they were worth.

Peasants were infected with all sorts of diseases and parasites that took away their strength and killed them at early ages. The first disaster -- a flood, a drought, heavy winds -- and peasants were faced with famine and death. To add to the difficulties of life, peasants were illiterate and superstitious. They had little contact with other villages. In most cases, they were born and lived and died in the same village.

The village itself was a collection of mud huts with few windows and little air. In the huts, farmers kept their tools and allowed whatever animals they might own to share the hut with their families. The hut had dirt floors, usually covered with filth.

The landowner, the moneylender, and the government official also lived in the village. Each of these people managed to use the peasants for his own purposes. Some peasants would work on the land of the landowner for a small share of the crop. The moneylender loaned money or seed to the peasants at huge interest rates. The government official took bribes in addition to taxes. The peasants were left with almost nothing from their work (VOICES OF EMERGING NATIONS, pp. 122-124).

TABLE A.

EXAMPLE OF DATA SHEET FOR INFORMATION-ANALYSIS

UNIT XIII, VOICES OF EMERGING NATIONS, Section II, CHINA

PAGE 122

PARAGRAPH:	NATURE OF INFORMATION: NEUTRAL (N)	NEGATIVE (L)	POSITIVE(H)
1	SP RICHEST CHINESE FAMILY could afford to own animals to help them work or to provide food (J)	G/E CHINA'S PEASANTS was a land of peasants(F) G/E average amount of land per peasant before the Communist revolution was less than four acres (M) G/E farming techniques and tools that were centuries old(F) SP peasants' wives pulled the plows(M) SP all planting and harvesting were done by hand (F) G/E CHINESE LIVESTOCK ate more grain than they were worth(J)	
2		SP CHINA'S PEASANTS infected with all sorts of diseases and parasites(F) took away their strength and killed them at early ages(F) the first disaster...and peasants were faced with famine and death(F) were illiterate and superstitious(J) had little contact with other villagers(F) were born, lived and died in the same village(F)	
3		SP CHINESE VILLAGES a collection of mud huts with few windows and little air(M) in the huts farmers kept their tools and...animals(M) huts had dirt floors usually covered with filth(M)	
4	SP CHINESE VILLAGES landowner, the moneylender, and the government official also lived in the village(F)	SP CHINESE VILLAGE LEADERS each of these people...used the peasants for his own purposes (J) some peasants would work on the land of the landowner for a small share of the crop (F)	

	NATURE OF INFORMATION		
PARAGRAPH	NEUTRAL (N)	NEGATIVE (L)	POSITIVE (H)
		SP CHINESE VILLAGE LEADERS(Cont.) money lender loaned money or seed to the peasants at huge interest rates(J) government official took bribes in addition to taxes(M) peasants were left with almost nothing from their work(J)	
a	G/S SUBSISTENCE LEVEL What is the meaning of(F)		
b		SP ILLITERACY/SUPERSTITION How do they add to the difficulties of life?(J)	
c		SP CHINESE VILLAGE LEADERS Why were the landowners, moneylenders, and government officials allowed to take advantage of the peasants?(M)	
d	H/C CHINESE WARLORDS Find out what they were and how they affected Chinese development(F)		
e	SP PEASANT LIFE Compare peasant life in southern China with peasant life in northern China in the 1800s(F)		
f	G/E CHINESE VILLAGE Draw a Chinese village as you think it would have looked(J)		
		SP PHOTOGRAPH: Chinese Women Farm Workers(F)	

UNIT XIII, VOICES..., CHINA

PAGE 124

NATURE OF INFORMATION

PARAGRAPH:	NEUTRAL (N)	NEGATIVE (L)	POSITIVE (H)
1		SP CHINESE PEASANT LIFE productivity in China was often below the subsistence level(J) this was the condition of 90 percent of the Chinese people right into the 1900s(J)	
	SP PICTURE: no caption(F)		

Each element of information is recorded in one of the cells defined by the Evaluative Load (N,L,H) and by Materials (Paragraph in Text--numbers; Question--small case letters; and/or Pictures--including maps and graphs. For example, if negative information is presented in the first paragraph, such information will be recorded under paragraph 1 (Material) and negative (Evaluative Load). To provide the reader with a way to identify each element of analysis in the Table, the first word of each unit is underlined.

3. The type of Content is based on a combination of areas of knowledge and disciplines which influence social studies curriculum, such as anthropology, political science, economics, etc. This category is defined as:

   SP social practices: information about family, role and status structures, with special emphasis on group and people relationships. This information includes educational, religious, and other social behaviors;

   P/G politics and government: information about the political structures (e.g., town councils, political leadership, governmental policies, etc.);

   H/C history and culture: information which deals with traditions, ideals, beliefs, and events inherited from the past (e.g., religious and philosophical ideas, historical events, historical personalities, etc.); and

   G/E geography and economics: information which examines the geographical and economic factors (e.g., population, land resources, communications, industry, etc.).

In Table A, the Type of Content for each element of the analysis is identified as social practices (SP), politics-government (P/G), history-culture (H/C), and geographic-economics (G/E).

D. Tabulating the Information

To find the quantity of information in each one of these categories, the number of elements in a cell is tabulated. In Table B, a cell is defined by the four factors: Material, Type of Content, Evidence, and Evaluative Load. The data from Table 1 is used to give an example of this tabulation procedure.

Insert Table B

Selection of Materials. Although this particular study was based on a seventh grade social studies textbook, the information analysis procedure lends itself to any grade level or social studies content area. It is specifically designed to handle a variety of content treatments. for example, this analysis was expanded to include a unit on Africa within the same textbook in order to compare the significant findings.

Design for Information Analysis. The information analysis design is a 3x3x3x3x24 full factorial, between elements design. The independent variables are:

TABLE B.

DATA SHEET

TEXT: VOICES OF EMERGING NATIONS CHAPTER XIII

UNIT: CHINA

TEXT	FACTUAL			JUDGMENTAL			MISLEADING		
TYPE	NEUTRAL	NEG.	POSITIVE	NEUTRAL	NEG.	POSITIVE	NEUTRAL	NEG.	POSITIVE
SP 1	1	7		1	7			4	
P/G 2									
H/C 3									
G/E 4		2			2				
T.	1	9	0	1	9	0	0	4	0
QUESTIONS									
SP 1					1			1	
P/G 2	1								
H/C 3	1								
G/E 4	1			1					
T.	3	0	0	1	1	0	0	1	0

KIND	LEVEL	EXPLANATION
Evaluative Load (E)	3	neutral, negative, positive
Supportive Evidence (S)	3	factual, judgmental, misleading
Type of Content (C)	4	social practices, politics-gov't, history-culture, geo-economics
Kind of Material (M)	2(3)	text, questions
Order of Information (O)	24	order of units

As the dependent measure, the total score per cell is used. Within each Unit, one point is given for each element of the analysis in a given cell in the design. the total score of a specific cell is the sum of the elements contained in it.

Using analysis of variance and orthogonal contrasts, the following questions can be asked of the data:

1. Are the differences between Evaluative Loads statistically significant? More specifically, (a) in this particular textbook is there significantly more negative information than neutral or positive information; and (b) is there significantly more positive information than neutral information?

2. Are the differences between the Supportive Evidences statistically significant? More specifically, (a) is there significantly more factual information than judgmental and misleading information?; and (b) is there significantly more judgmental information than misleading information?

3. Are the differences between the Types of Content statistically significant? More specifically, (a) is there significantly more geographic-economic information than all the other types?; (b) is there significantly more political information than social practices and history-cultural information?; and (c) is there significantly more social practices information than history-cultural information?

4. Are the differences between the Kind of Materials statistically significant? More specifically, is there significantly more text material than others?

5. Are the differences between the Order of Information (Units) statistically significant?

Results. An analysis of variance was run to assess the effects of the five factors (Load, Evidence, Content, Material, Order). Table C gives the analysis of variance results. In general, for the main effects: (a) there is significantly more negative information than neutral or positive information (Figure a, $p < .001$); (b) there is significantly more judgmental evidence than factual or misleading information (Figure b, $p < .001$; and (c) there is significantly more political-governmental content information than all other types of information (Figure c, $p < .01$).

Insert Table C

Insert Figures a,b,c

Several interesting interaction effects are found: (a) there is significantly more negative information across the chapters for judgmental information than factual or misleading information (Figure e, $p \leq .001$); (b) there is significantly more negative information concerning Chinese politics-government than positive or neutral information (Figure g, $p \leq .01$); (c) the information tends to be significantly more judgmental and misleading for social practices and politics-government than for history-culture and geographic-economic information (Figure g, $p \leq .01$); (d) when looking at text material, the data suggests that all information on China in this textbook tends to be negative or positive rather than neutral; there is more highly negative judgmental-misleading information than negative factual information; and there is more moderately positive judgmental-misleading information than positive factual information (Figure h, $p \leq .001$).

Insert Figures e,f,g,h

In short, the findings show more negative, judgmental, and misleading information, particularly for content dealing with Chinese politics-government. Also, there was limited factual information concerning Chinese social practices. This result is interpretable in view of the fact that ordering of the chapters within the China unit makes a slight difference, that is, (10 several chapters deal with case studies which perpetuated judgmental and misleading information; (2) there was a higher frequency of information dealing with politics-government which tended to be negative in nature; (3) any positive information was usually counterbalanced by negative information in concluding remarks at the end of the chapter or as found as an effect of order of subsequent chapters; and (4) the authors chose to judge China and her people on how close they came to approaching the 'standard' Anglo-American norms.[4]

[4]In Table D. of Appendix A are presented the frequency means and frequency percentages for each of the variables which support the above statements.

TABLE C.

ANALYSIS OF VARIANCE FOR MAIN FACTORS OF INFORMATION ANALYSIS [a]

Source	df	MS	F
EVALUATIVE LOAD (E)	2	9.0	12.2***
SUPPORTIVE EVIDENCE (S)	2	14.5	19.7***
CONTENT TYPE (C)	3	5.6	7.5**
KIND OF MATERIAL (M)	1	60.8	82.2***
ORDER OF INFORMATION (UNITS) (O)	23	2.2	3.0**
E x S	4	3.5	4.7**
E x C	6	3.9	5.2**
E x M	2	40.8	55.2***
E x O	46	1.9	2.5**
S x C	6	3.3	4.4**
C x O	69	6.7	9.0**
M x O	23	2.2	3.0**
E x S x M	4	4.5	6.1**
E x C x M	6	2.4	3.2**
E x C x O	138	1.4	1.9**
E x M x O	46	1.4	1.9**
C x M x O	69	2.8	3.8**
E x C x M x O	138	1.9	2.5**
E x S x C x M x O, Error Term	276	.7	---

** $p \leq .01$ *** $p \leq .001$

[a] Only significant sources are reported.

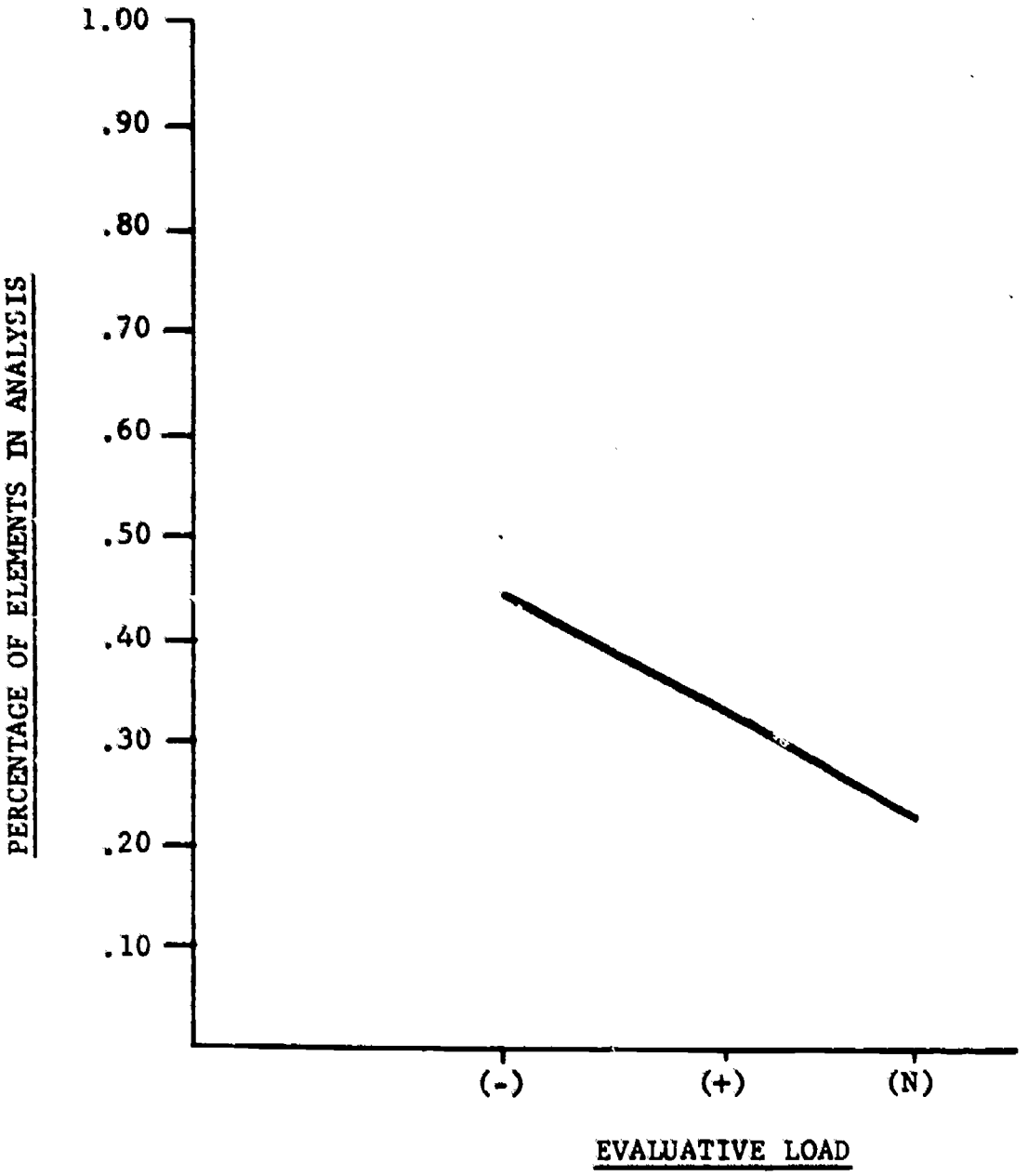


Figure a.

Percentage of the average frequency means for the evaluative load (-, +, N, denoting an element as either negative, positive, or neutral in value).

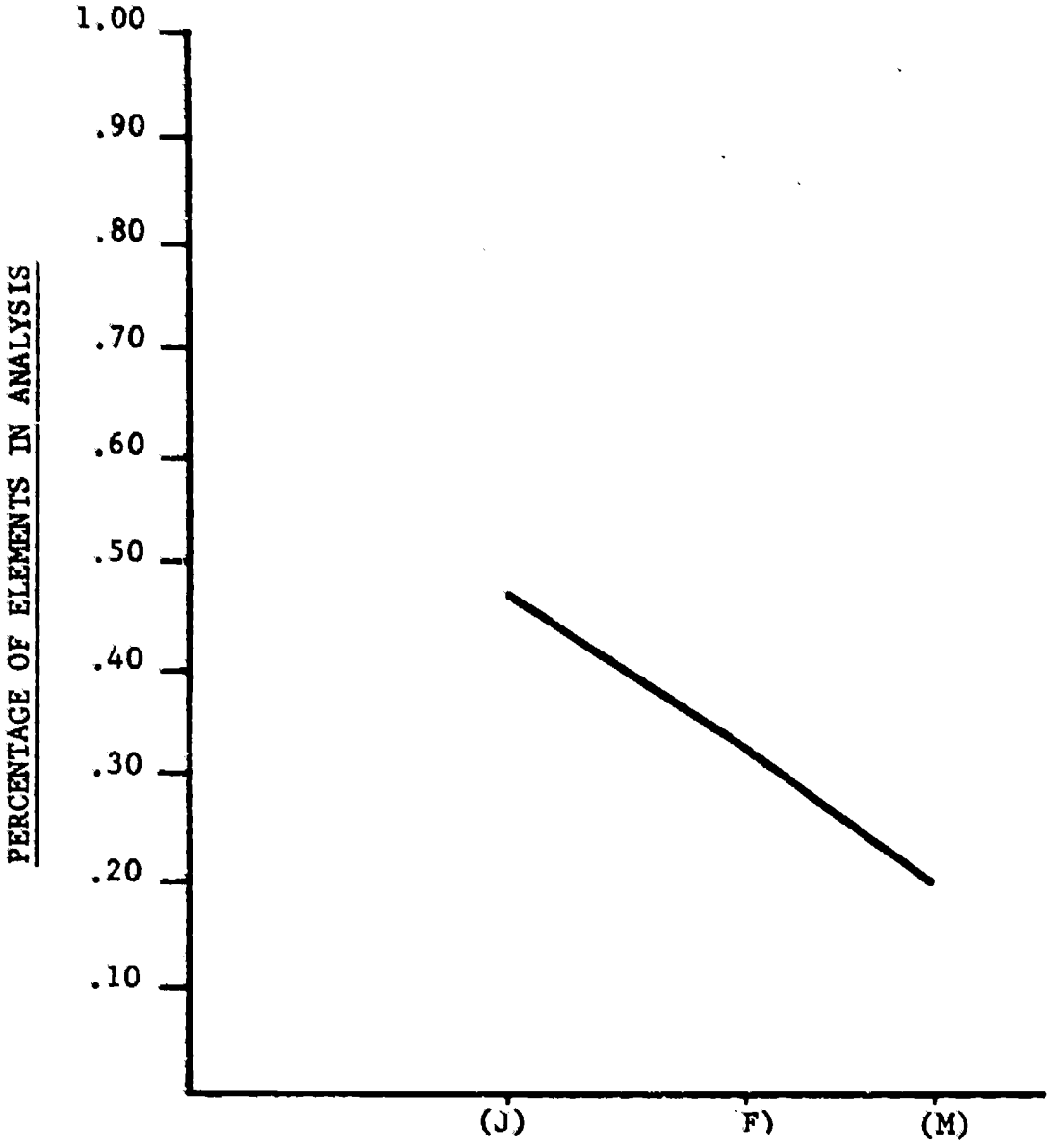


Figure b.

Percentage of the average frequency means for supportive evidence (J, F, M, denoting an element as either judgmental, factual, or misleading in value).

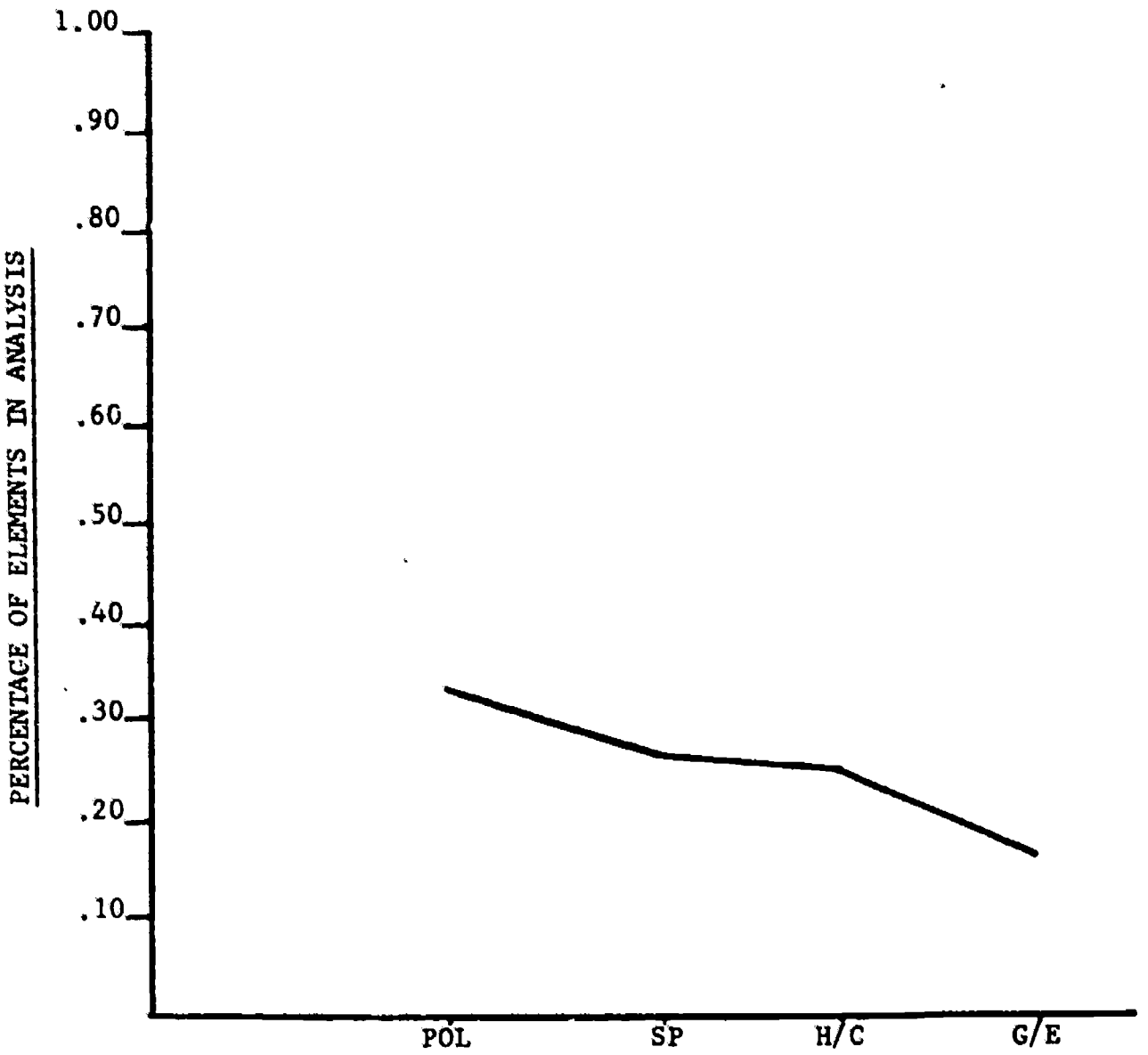


Figure c.

Percentage of the average frequency means for the types of content (POL, SP, H/C, G/E, denoting an element as either of politics-government, social practices, history-culture, or geography-economics).

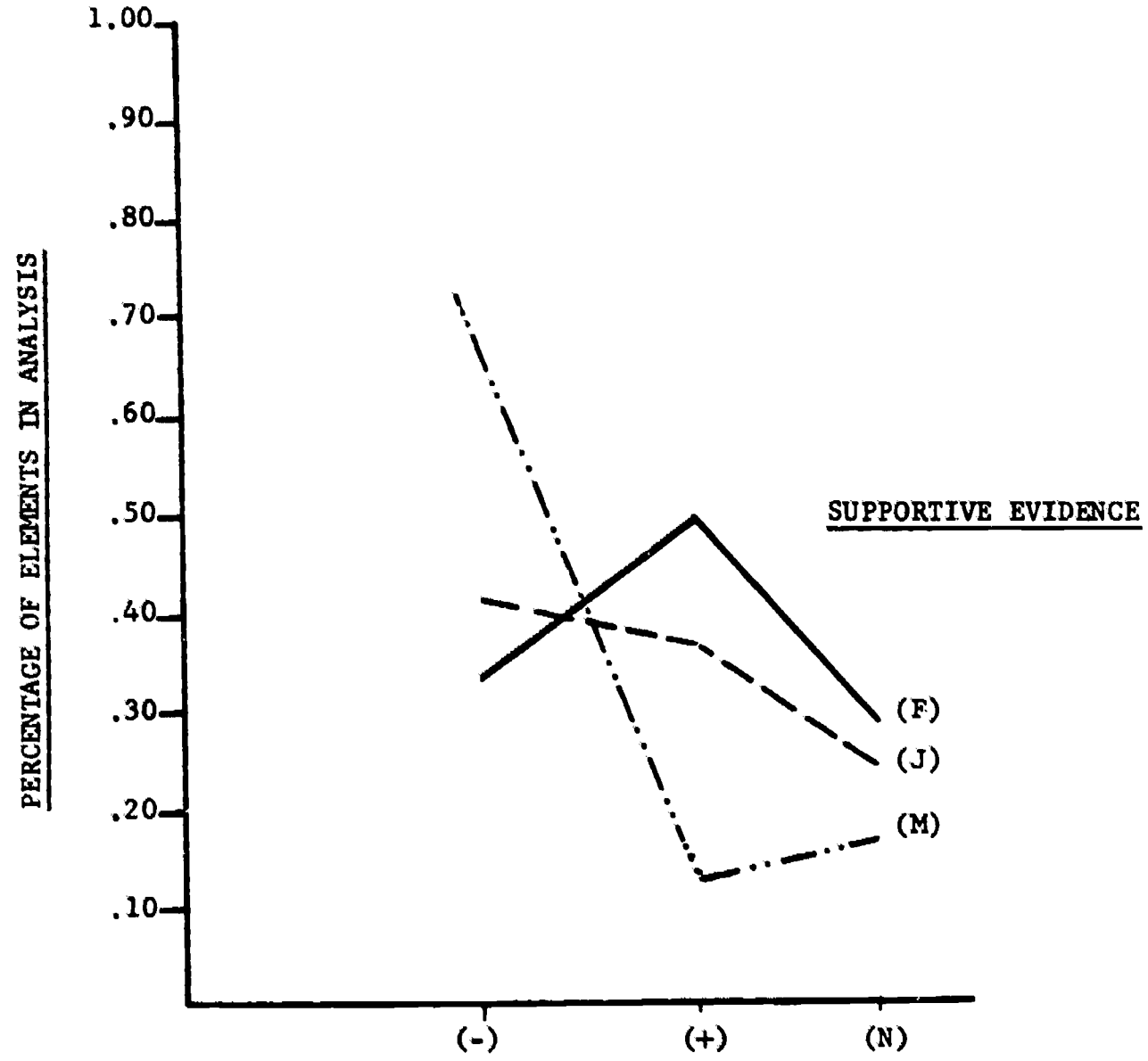


Figure e.

Percentage of the average frequency means for the interaction between evaluative load (-, +, N, denoting an element as either negative, positive or neutral in value), and supportive evidence (F, J, M, denoting an element as either factual, judgmental, or misleading).

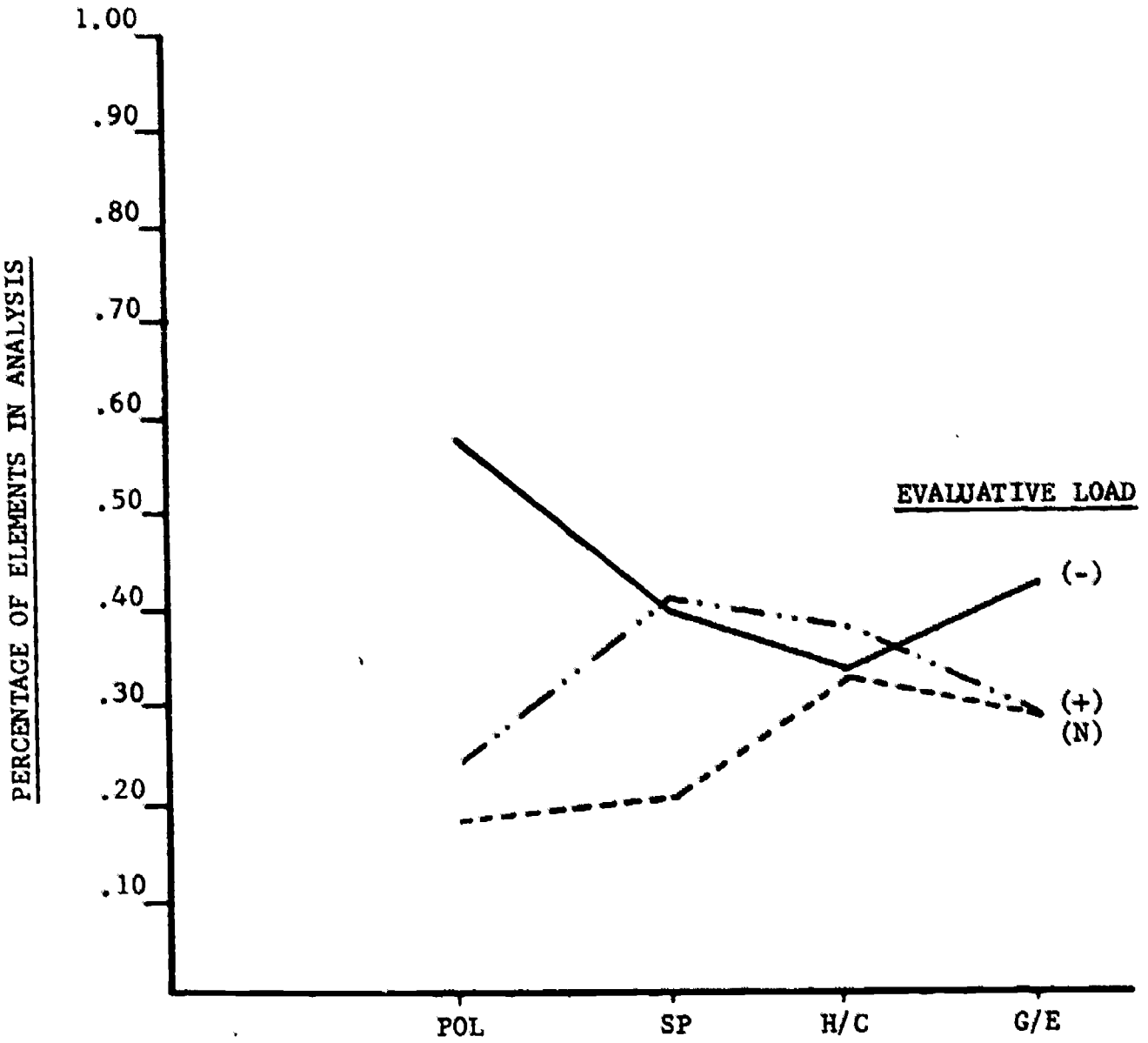


Figure f.

Percentage of the average frequency means for the interaction between evaluative load (-, +, N, denoting an element as either negative, positive, or netural in value), and types of content (POL, SP, H/C, G/E, denoting an element as either of politics-government, social practices, history-culture, geography-economics).

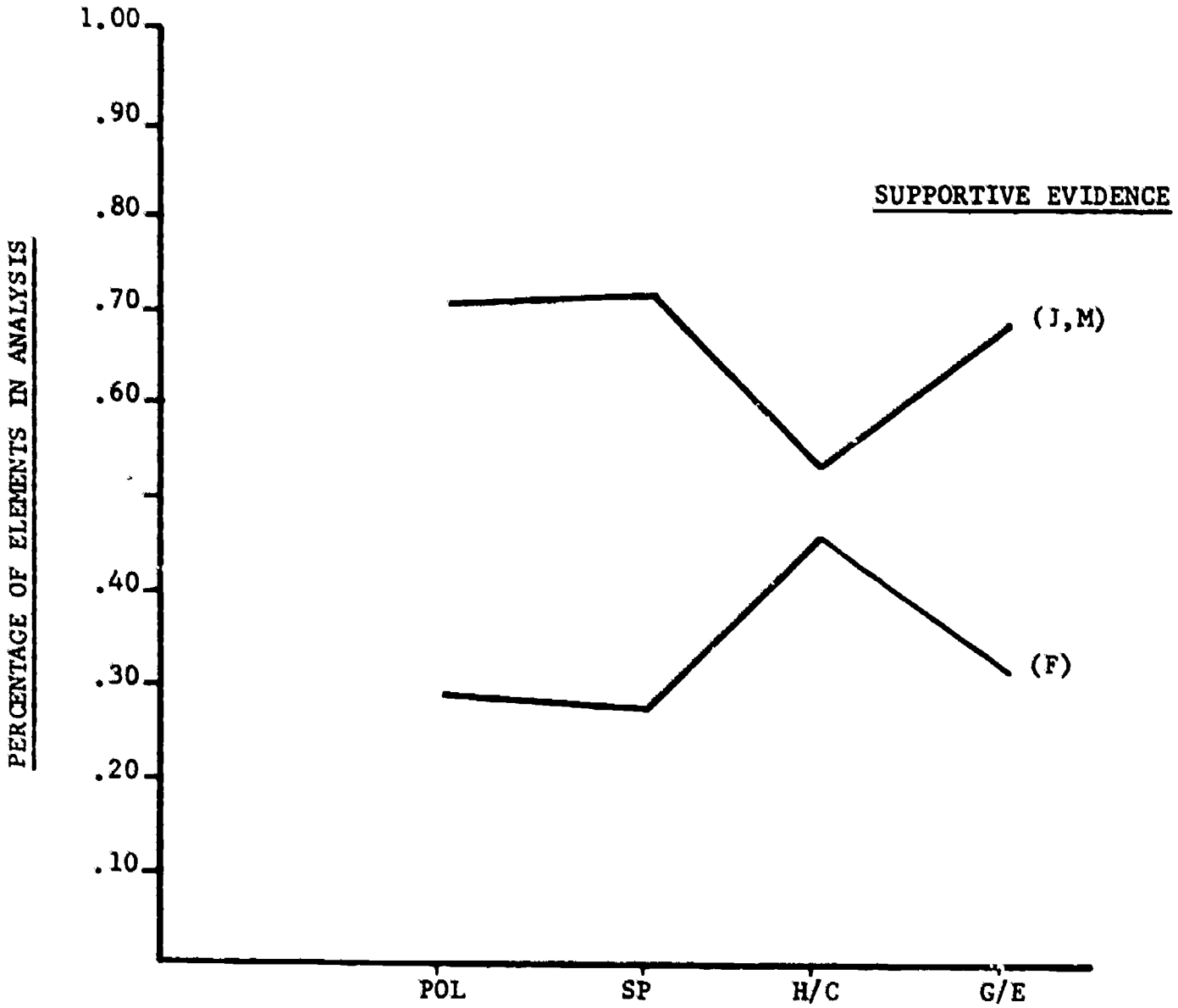


Figure g.

Percentage of the average frequency means for the interaction between supportive evidence (J and M, F, denoting an element as composed of judgmental and misleading information or factual information) and types of content (POL, SF, H/C, G/E, denoting an element as either of politics-government, social practices, history-culture, and geography-economics information).

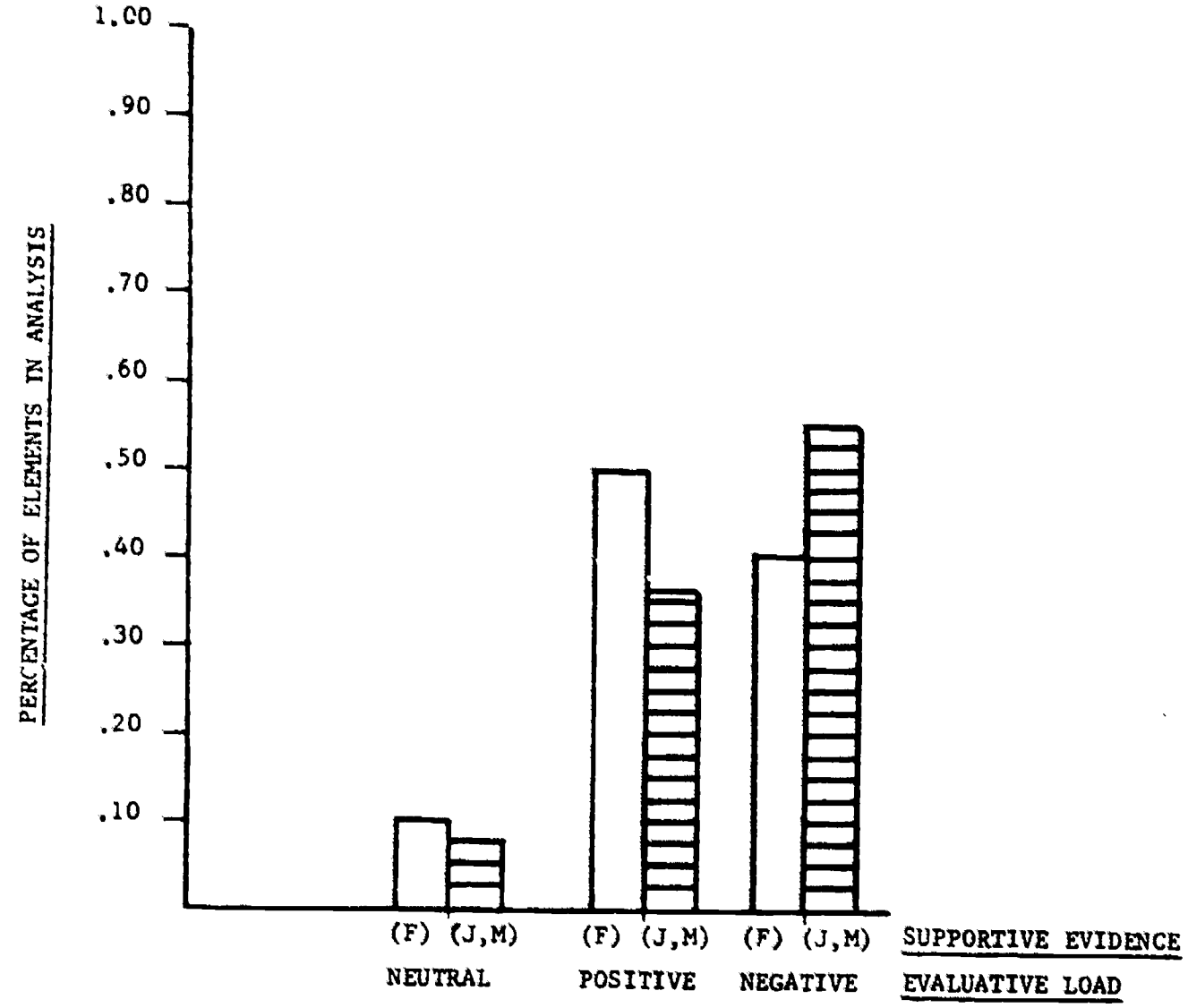


Figure h.

Percentage of the average frequency means for the three-way interaction between supportive evidence (F, J and M, denoting factual and the combination of judgmental and misleading information) by evaluative load and text material.

Discussion. This information analysis can be quite useful as a technique for analyzing social studies curriculum materials. It provides the curriculum developer and evaluator with specific information concerning the amount of evaluative load and the use of supportive evidence, which is contained in a given text book within a specific chapter of study. It also offers the means of judging how statistical significance of the inferences can be drawn from the data. Finally, it can generate baseline data that, for future studies, permit the prediction of: (a) how these materials are likely to affect student attitudes; (b) which teaching procedures are more adequate if one is to use these materials; and (c) which changes and cues are to be inserted in the social studies textbook. Perhaps, more importantly, it could serve as a training device/technique for teachers in assessing the load and evidence factors of their instructional materials.

SECTION II

THE APPLICATION OF INFORMATION INTEGRATION THECRY TO SOCIAL STUDIES MATERIALS

In this section, the authors will discuss the results of an experiment conducted to isolate and quantify the effects of social studies textbook information on student attitudes.

Introduction

Information integration theory has recently been applied to the investigation of attitudinal effects of prose materials (Anderson, 1973, Kaplan and Kemmerick, 1972; Sawyers and Anderson, 1971). In these studies, it was postulated that by manipulating the attitudinal value or evaluative load of a message according to its degree of favorableness and the contextual load of information (for example, the degree of favorableness of the number and order of the message), it is possible to account for how a person evaluates and processes information.

In one example, Anderson (1973) sought to identify how subjects form attitudes about U.S. Presidents. He found that a person's impressions are a function of an accumulation of favorable messages. That is, the addition of the amount of favorable information will increase the favorableness of the response. In the Kaplan and Kemmerick (1972) study concerned with jurors' judgments, the evaluative load again was found to function linearly. Thus, these researchers examine the connotative dimensions of information.

The main focus of the present study is to extend the theoretical work in information integration to prose materials in the social studies. Since in social studies materials, the elements of information presented include judgments, facts, and cultural perspectives, it can be assumed that a learner's value structure is substantially attributed to the integration of these pieces of information over time.

With the application of a fractional factorial design, the linear model was further tested by introducing two subject variables and three moderately complex contextual factors in addition to the manipulation of the evaluative load. The two subject factors are the stated entry attitude of the subjects and the reading achievement levels of the subjects. The contextual factors include the supportive evidence (the factual or judgmental quality of the paragraph), the content of the paragraph, and the type of country described in the paragraph.

We predicted that the degree in the change of impression is linearly attributable to the load of positive or negative information of four paragraphs. For instance, if the subject has a positive entering impression about a given country and is presented with three paragraphs containing positive information and one paragraph containing negative information (PPPN), it can be predicted that his resultant impression will still be slightly positive. If the subject has a positive entering impression about a given country, but he reads four paragraphs containing negative information (NNNN), it can be predicted that his resultant impression will be negative.

It was also possible that the quality of the supportive evidence, factual or judgmental information, might interact with its evaluative load. In this case, it was hypothesized that if the subject has a positive entering impression about a given country and is presented with a paragraph which has a positive load and factual information, his resultant impression will be strongly affirmed; or if the subject has a positive entering impression about a given country and is presented with a paragraph which has a positive load and judgmental information, his overall impression will be affirmed but to a lesser degree than with factual information because judgmental information can be assumed to be less credible.

Further, the contextual effects which pertain to subject matter content (that is, content areas and countries) were predicted to significantly interact with the evaluative loads of a passage set. Finally, it was thought that the reading ability of the subjects would significantly affect their ratings on the paragraphs.

Method

Subjects. In June 1973, thirty-two graduating eleventh grade students participated in this study.[1] These students were suburban, "middle class" white Americans enrolled in social studies classes which focused on the study of American institutions. The subjects were assigned to experimental conditions according to sex and reading achievement scores. All subjects were paid four dollars for a single, two hour session.

Materials. The materials used in this study were paragraphs abstracted from numerous currently used social studies textbooks and other social studies supplementary materials. In the selection of these materials, a special effort was made to represent the information that is actually transmitted in the social studies classroom.

Paragraph Construction. From these materials, 256 paragraphs were constructed to fit the experimental conditions specified by a fractional factorial design. The first step toward the construction of these paragraphs was to control for possible stereotypic perceptions of information related to particular kinds of country. Two factors were assumed to be instrumental to the formation of

---

[1]The authors wish to acknowledge the cooperative efforts of Homestead High School, Fremont Union School District, Cupertino, California, its principal, staff and students for providing the assistance needed to implement this study.

stereotyped impressions. These factors are the geographical location of the country (European countries and Asian countries); and the degree of technological development of the country (modern or emergent). The four cells defined by these two two-level factors call for the following kinds of countries: (1) European-modern country; (2) European-emergent country; (3) Asian-modern country; and (4) Asian-emergent country. Consequently, for constructing the paragraphs, the following four countries were selected: Britain, Spain, Japan, and Mainland China.

Social studies materials were analyzed using a content analysis technique devised by the first author (Rotzel, 1972). As a result of this analysis, the following four content areas were identified: geography-economics since 1945, history-culture prior to 1945, social practices since 1945, and politics-government since 1945. The second step then in the construction of the paragraphs was to control for possible effects of the subjects' impressions regarding particular content areas. These four content areas were included as two two-level factors in the fractional factorial design. Thus, sixteen paragraphs were selected for each content area within each country.

The third step was to control for possible effects of the evaluative load of information (positive or negative) and the supportive evidence for this information (judgmental or factual). The evaluative loads were controlled by criteria thought to be standard American values as established in the Rescher study (Baier and Rescher, 1969). The four cells defined by these two two-level factors allowed the construction of the following combinations of paragraphs: (1) positive-judgmental paragraph, (2) positive-factual paragraph, (3) negative judgmental paragraph, and (4) negative-factual paragraph.

One paragraph with a positive evaluative load crossed with judgmental evidence and another with a negative evaluative load crossed with factual evidence presented here will illustrate the general character of the paragraphs.

CHINA, Negative–Factual Paragraph

China's gross national product (GNP) was approximately $120 billion in 1970. However, the per capita income was only $145 compared with the United States of $5,000 per capita and the U.S.S.R. of $2,000 per capita. One explanation of this low income level is the manner in which the process of leveling up the living conditions of the Chinese people has been accomplished by a leveling down of the status and material rewards of the working people. According to Chinese government sources, monthly wages in urban areas range from 34 yuan to 108 yuan (about U.S. $14 to U.S. $45). In factories, wages are fixed in eight grades according to skill, length of experience, and ideological reliability. Only a relatively few technicians, managers, and senior officials get salaries substantially higher than $45.

JAPAN, Positive–Judgmental Paragraph

The Japanese probably value literacy more than any Western nation. The number of titles that the Japanese publishing industry turns out every year is among the highest in the world. Japan's most widely-read monthlies publish weighty volumes filled with amazingly diversified, sophisticated material. Newspaper circulation in Japan exceeds those of all European countries. The Japanese educational system deserves most of the credit for making the people in this island-nation so aware of the world they live in.

To control for the degree of reading difficulty of each paragraph, a readability study was conducted. Three readability formulas were applied to each paragraph (Aukerman, 1972; Dale and Chall, 1958; and Fry, 1969). No significant systematic differences ($p \leq .05$) were found according to the design factors of country and content areas.

Procedure. Before the test session started, subjects were assigned to their respective test conditions defined by the fractional factorial design. That is, eight students were assigned to each cell of the design defined by the different factors used in the construction of the paragraphs. These eight subjects were selected according to their reading achievement (high or moderate) and their sex (male or female), so that two students were assigned to each one of the four cells of these two two-level factors.

After each subject was assigned to his appropriate cell, he was given a color-coded three-ring notebook which contained the specific test instructions and materials for that cell. Subjects were given several tasks before the actual experiment. First, the subjects completed an entering rating scale designed to assess the subjects' entry impression regarding eight countries. These countries were presented in alphabetical order: Argentina, Britain, China, France, Japan, North Vietnam, Spain and Thailand. The subjects were to project their overall impression about each country by rating the country using a four-point scale from highly positive to highly negative. Note that four countries, not included in the study (Argentina, France, North Vietnam, Thailand), were selected so that they would match the locational and technological characteristics of those countries included in the study (that is, Britain-France, Japan-Thailand, China-North Vietnam and Spain-Argentina). The stated entry attitude of the students toward Britain, Spain, Japan, and China was later used as one of the between subjects factors in the final analysis.

Second, the subjects performed a warm-up task with two sets of passages similar to the actual experimental passages. After the warm-up session, the subjects then were asked to begin to read the first of the sixteen sets of four paragraphs. After each paragraph, subjects were told to judge whether or not each paragraph included judgmental or factual information on the four point Likert-type scale, "1" for highly factual and "4" for highly judgmental. When the subject had completed each set of paragraphs, he was asked to rate (1) his overall impression for the given country (general impression measure), (2) his immediate impression for the given content area (specific impression measure), and (3) his present inclination for living in the given country for a period of four years (applied impression measure). A Likert-type scale from 1 to 4 was used to measure his stated impressions. To insure that the subject was carefully reading each paragraph, two true/false comprehension questions were given after each set of four paragraphs. The questions were randomly selected from each paragraph in a set. There were no time restrictions.

Experimental Design. A one-half fraction design with six between subjects, two-level factors was used for controlling possible effects of subject and order of presentation variables. The six, two-level factors were: sex of the subject (male or female), reading achievement of the subject (high or moderate), and four two-level factors to block for the order of presentation of the countries. Thus, order of presentation of countries was confounded with blocks (groups of subjects).

A one-sixty-fourth fraction design of twelve with subjects, two-level factors was sued to assess the effects of country, its geographic location and level of technological development, content areas, evaluative load, and supportive evidence. The twelve two-level factors were: geographical location of countries (West: Britain, Spain; Asia: Japan, China); technological development of countries (Modern: Britain, Japan; Emergent: Spain, China); content areas

with four levels (geographic-economic, history-culture, social practices, politics-government); evaluative load for each set of four levels (geographic-economic, history-culture, social practices, politics-government); evaluative load for each set of four paragraphs with two levels (positive and negative information); and supportive evidence for each set of four paragraphs with two levels (judgmental and factual evidence).[2]

Results

In this experiment, the three dependent measures (general impression, specific impression, and applied impression) were analyzed separately using a factorial analysis of variance. The significance tests for almost every design factor were similar across the three dependent measures. Consequently, the subjects' rating scores in each of the three measures were added to form a fourth measure (combined impression). The results of this fourth measure will be reported in this paper.

The most relevant finding was the significance of the evaluative load (See factor L in analysis of variance Table 1). This factor was specifically tested for linearity using polynomial orthogonal contrasts. It was found that the number of paragraphs containing positive load linearly affect the degree of favorableness of the subjects' impressions ($p<.01$). No significant quadratic or cubic effects were found.

The linear function in this case indicates that there is a comparable amount of increase in favorableness towards a country for each positive paragraph included in a set of four paragraphs (See Figure 1). For example, if the four paragraphs are negative, the subjects' average impression for the country will be negative; when one positive paragraph is added to three negative paragraphs, the average impression for the country is still negative; when two positive paragraphs are added to two negative paragraphs, the average impression for the country is unchanged: when three positive paragraphs are added to one negative paragraph, the average impression for the country is positive; and when four paragraphs are formed and no negative paragraph remains, the average impression for the country is more positive. Subjects seem to build up or accumulate and integrate favorable information or unfavorable information. Thus, when a paragraph projects a highly positive load, the subject, in turn, forms a highly positive impression.

Significant main effects were also found for contextual factors, such as technology of the country ($p<.01$) and content areas ($p<.01$). For example, the two countries with modern technology were judged significantly more favorably than the emergent countries. With regard to the content factors, the ratings for politics-government were significantly less favorable than the other three content areas.

the major interaction effect of interest, the interaction between contextual factors and evaluative load, was found to be nonsignificant. It is interesting to point out that this finding is similar to that of Anderson (1973).

Significant main effects of subjects' entering impression were also found ($p<.01$). It is not surprising to find that differences among subjects do exist before the subjects are given any type of treatment. Another potentially relevant interaction effect would have been on between subjects' entering impression

[2] If one were to use a full design for conducting this study, each subject would have had to read a total of 4,096 paragraphs. This fractionalized design permitted the authors to control for variables by systematically selecting 256 paragraphs such that each subject read a total of sixty-four paragraphs.

and evaluative load. This interaction was not found to be statistically significant. This suggests that the resultant impression and evaluative load. This interaction was not found to be statistically significant. This suggests that the resultant impression of a passage will be *only* a linear function of the evaluative load of the paragraphs. The values of the paragraphs have a cumulative effect upon the initial evaluative load of the entering impression.

In summary, the evaluative load factor can predict how the subjects integrate their predisposed entry impression with either positive or negative evaluative loads to form a resultant impression. An additive model does account for a linear function of the number of positive or negative paragraphs presented to the subjects.

There is no statistical evidence which suggests that the supportive evidence affects the resultant impression of the subjects. That is, while subjects were able to identify factual and judgmental information contained in the paragraphs, they did not use this knowledge about the quality of the information for determining their resultant impression. While content areas and the levels of technological development for different countries were judged as significantly different, again subjects' overall impressions were not influenced by these factors. and finally, in postulating that subjects' reading achievement would affect ratings, it was found that by using a strict criterion of $p < .01$, no statistically significant differences were found.

Discussion

Integration Theory. The most significant finding in this study is the confirmation of previous studies that the subjects' resultant impression is formed as a linear function of the cumulative amount of the evaluative loading of information. Also, it was found that contextual factors, when adequately controlled as in this study, tend to have relatively little influence on the resultant impression of a passage. Thus an additive model of integration can predict how positive or negative information, in combination with the subjects' entry impression, will either affect the intensity of the impression or change it.

Educational Implications. This study offers empirical evidence for alerting educators to the importance of identifying the entry attitude of students, the positive and negative values present in materials, and the consequential need to teach students how judgments are made based on the amount of positive and/or negative information.

The NCSS Curriculum Guidelines (1972) prescribe that curricula should seek "to establish 'value free' situations in order for students to discern between facts and opinions, objectivity and bias; and to point out the validating arguments supporting values and their specified consequences." In keeping with these objectives of the NCSS Guidelines, the authors underscore the need to (1) train teachers to use learning stiuations which will guarantee the balance of simultaneous presentations of favorable and unfavorable messages; (2) reform textbook and curriculum writing to avoid an inadvertent indoctrination due to the uncontrolled evaluative loads or the lack of simultaneously presented contrary viewpoints; and (3) teach students basic decision-making skills so they will be able to adequately assess the evaluative load of the message.

TABLE 1.

Analyses of Variance for Combined Measure (General, Specific, Applied Impressions) Comparing Scores on Main Factors in Analysis I

Codes	Source	df	MS	F
	Between Subjects			
A	Reading Ability (High/Moderate)	1	21.3	5.5
B	Stated Entry Attitude (More Positive/More Negative)	1	30.7	7.9**
	A x B	1	.4	< 1
	N(AB)	28	3.9	
			MS(E)	
	Within Subjects			
C	Impression Measures (General/Specific/Applied)	2	1.7	1.5
	NC(AB)	56	1.1	
D	Geographical Location of Countries (West:Britain,Spain/East:Japan,China)	1	1.6	4.2
E	Technological Development of Countries (Modern:Britain,Japan/Emergent:Spain,China)	1	2.1	32.3**
F	Content #1 (Social Practices,Politics/Geography-Economics,History-Culture)	1	.4	9.8**
G	Content #2 (Geography-Economics,Politics/History-Culture,Social Practices)	1	.3	19.2**
H - K	Evaluative Load (Positive/Negative)			
H	Paragraph #1	1	.9	9.4**
I	Paragraph #2	1	.5	< 1
J	Paragraph #3	1	.7	14.9**
K	Paragraph #4	1	1.2	19.0**
L	[a]Linearity of Evaluative Load Across Passage Sets (PPPP,PPPN,PPNN,PNNN,NNNN)	1	.1	73.2**
M - Q	Supportive Evidence (Judgmental/Factual)			
M	Paragraph #1	1	2.9	< 1
O	Paragraph #2	1	.4	1.8
P	Paragraph #3	1	.5	3.4
Q	Paragraph #4	1	.6	< 1
	C x D	2	.4	15.4**
	C x E	2	.5	5.6**
	C x F	2	.2	4.2
	C x G	2	.2	16.3**
	C x J	2	.2	15.1**
	C x K	2	.2	5.9**
	C x L	2	.1	9.9**
	D x F	1	.3	5.4
	E x G	1	.3	4.7
	F x G	1	.5	8.4**
	D x A x B	1	1.6	6.0
	J x A x B	1	.7	5.4
	D x F x A	1	.3	13.7**
	D x F x B	1	.3	4.6
	D x F x C	2	.1	4.8
	E x G x C	2	.2	5.9**

** $p < .01$

[a]Linear polynomial and paragraph contrasts are not independent.

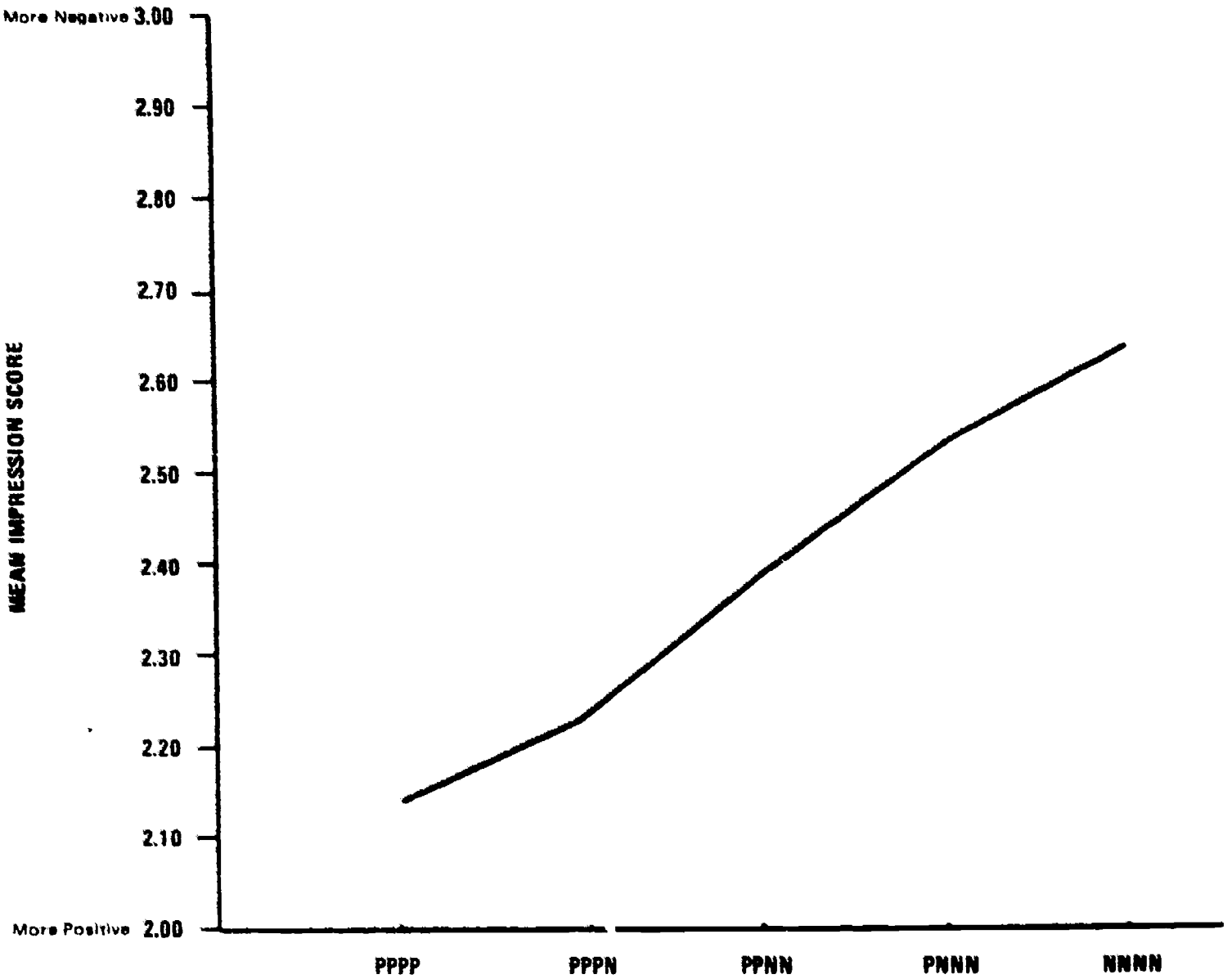


Figure 1.

Mean impression rating scores of the Combined Impression measure are a function of stimulus polarity (PPPP, PPPN, PPNN, PNNN, NNNN, denoting a passage set highly positive, moderately positive, neutral, moderately negative, and highly negative in value).

More specifically, this study suggests that for curriculum development and instructional strategies, it would be desirable to encourage:

teachers to ---

(1) identify the entry attitudes of the students (e.g., with the use of pretests or discussion sessions);
(2) select materials which systematically identify the positive and negative values present in paragraphs or chapters of materials;
(3) estimate whether the materials used will have a balanced or unbalanced effect on a student or group of students; and (for the unbalanced effect)
(4) provide additional materials and encourage inquiry procedures, so that the student can make value choices based on balanced loadings of information on a given issue;

textbook and curriculum writers to ---

(5) make explicit the evaluative loads of each topic or chapter in instructional materials, and acknowledge the specific criteria used to define the favorable values;
(6) present the pro and con arguments on given issues simultaneously and systematically;
(7) provide annotated bibliographical references which will identify positive and negative arguments on specific topics, in order that the effects of the materials are suited to the 'balanced' need of the student or group of students;
(8) make suggestions of diagnostic-assessment exercises to be used to identify student predispositions; and
(9) begin to make predictions of the cumulative effect of the evaluative loads present in their materials;

and student be taught to ---

(10) differentiate between positive and negative information;

(11) make decisions on the basis of the amount and quality of positive and/or negative information, as well as the relevancy of the sources of information; and perhaps more explicitly,
(12) predict, adapt, and produce change themselves in the context of continual modifications in values and accepted behaviors, without emphasizing specific criteria of judgments as 'good' or 'bad'.

Relevant social studies literature has also pointed out the need for controlling the degree of favorableness of the message. For example, the California Task Force Report (1971) recommended that more positive information about the contribution and role of the American minority groups be given equal space and emphasis in social studies textbooks. The Banks (1969) content analysis study suggested that the discrimination issues appeared more frequently in textbooks than the racial harmony and civil rights issues. He inferred that current textbooks emphasized more negative information than positive information about Black americans. Numerous new editions of civics, world problems,

and American history textbooks are attempting to present anthologies which seek to present two sides of an issue, pro and con (e.g., numerous positions on causation of a specific problem; primary sources differing in point of view). The purpose of this approach is to permit and encourage students to formulate their won conclusions.

The empathy appeal is still another recent form of treatment found in textbooks which deal with information about poverty, inner-city dwellers, minority groups, developing nations, and drugs. It is not clear, however, in any of these above examples, whether the loading of the information will or will not affect the learning process in a positive or negative way. The point to be drawn is that the evaluative load of content cannot be assumed nor inferred from the given examples. The evaluative loads of the message must be empirically tested.

Results of the author information analysis of two social studies textbooks have shown that these texts do not adequately control for the context in which the message is presented. In most of the cases, one can conclude that it will be very difficult for the student to weigh the contrasts between positive and negative information without a balanced context. Inadvertently, textbooks load some chapters with positive information and other chapters with negative information. For example, a historical section at the beginning of a textbook might present information about Black Americans as poor, uneducated, and as institutionalized slaves during the pre-Civil War days; and in the politics and government section at the middle or end of the text, describe Black Americans as working toward integration and racial harmony.

In general, social studies teaching practices do not include a careful assessment test for the entering impression of the students toward specific issues. the results of this study suggest that a student reading from this kind of textbook will tend to have a negative impression toward the historical events and a positive impression toward the political practices of the Black Americans. However, there is another factor that affects the student's overall impression, that is his entry impression. For example, if a student is negatively predisposed toward Black Americans, then the historical events section will strengthen a negative impression; and the information concerning racial harmony will have a small effect on the student's impression.

Thus, his overall impression toward Black Americans will be proportionate to the amount of positive and negative messages presented and then added to his entry impression. It also follows that the student with a positive entry impression would be influenced negatively toward the historical information, and would be influenced more positively toward the socio-political practices, resulting in an overall impression dependent upon the amount of negative and/or positive information.

The experimental research data is not yet sufficient to formalize a curriculum model which views the learner as the "integrator" of attitudinal impressions. However, the experimental findings continue to provide further evidence for a general information integration theory. It appears inevitable that social studies educators will need to account for the development of instructional materials and, especially, to show formal, experimental evidence of balance of totality of information about such topics as race, nations, political systems, historical events, and cultural perspectives.

Further Work. The research methodology used in this study also has important implications. While there have been many studies attempting to isolate curricula materials which are thought to affect attitudes (Fisher, 1968, Litcher and Johnson, 1969; McDiarmid and Pratt, 1971), the methodologies of pre/post treatments or content analyses are incapable of accounting for what and how information is processed to change or maintain an attitude. By using the fractional factorial designs, scales of measurement, and analysis of variance, the conditions under which information is processed (that is, how the subject combines messages to form an overall impression) can be explained by the manipulation of numerous factors.

This study made a specific effort to measure subjects' entry impression, to systematically control for the amount of positive and negative information presented to the subject, and to control for the context in which the information was presented. Further exploration could be directed toward a detailed examination of more contextual factors such as pictures with text, critical questions with text, and teaching strategies. For example, picture dimensions (e.g., concreteness, familiarity, pictures with or without captions) could be introduced. Another variant of this experiment's design could be to add longer paragraphs and/or include more paragraph combinations of passage sets of the evaluative load for looking at integration effects.

THIS PAPER HAS BEEN TYPED AND REPRODUCED THROUGH THE FACILITIES OF THE SAN MATEO COUNTY OFFICE OF EDUCATION, NOVEMBER, 1974.

APPENDIX A

FREQUENCY MEANS FOR INFORMATION ANALYSIS OF THE TEXTBOOK, VOICES OF EMERGING NATIONS, SECTION II ON CHINA, pages 88-157

TABLE D

Cell Frequency Means and Percentages of Main Effects
for the Four Contextual Factors of the Information Analysis

	MATERIAL				CONTENT TYPES								SUPPORTIVE EVIDENCE						EVALUATIVE LOAD					
Unit	Text		Questions		Social Prac.		Pol/Gov't		His/Cul		Geo/Econ		Factual		Judgmental		Misleading		Neutral		Negative		Positive	
	M	%	M	%	M	%	M	%	M	%	M	%	M	%	M	%	M	%	M	%	M	%	M	%
1	.39	.70	.17	.30	.0	.0	.33	.30	.0	.0	.78	.70	.17	.20	.38	.45	.29	.35	.13	.15	.71	.85	.0	.0
2	.08	.14	.47	.85	.0	.0	.06	.05	.06	.05	1.00	.90	.13	.15	.29	.35	.42	.50	.46	.55	.33	.40	.04	.05
3	.50	.72	.19	.28	.94	.68	.0	.0	.33	.24	.11	.08	.13	.12	.75	.71	.17	.16	.38	.36	.21	.20	.46	.44
4	.78	.78	.22	.22	.78	.89	.06	.03	.17	.08	.0	.0	.25	.17	1.00	.67	.25	.17	.33	.22	.88	.59	.29	.19
5	.42	.84	.08	.16	.06	.06	.83	.83	.11	.11	.0	.0	.25	.33	.25	.33	.25	.33	.21	.28	.50	.67	.04	.05
6	.28	.60	.19	.40	.06	.06	.11	.12	.67	.71	.11	.11	.42	.59	.25	.35	.04	.06	.33	.46	.13	.18	.25	.35
7	.36	.56	.28	.44	.0	.0	.0	.0	1.11	.87	.17	.13	.21	.22	.29	.31	.45	.47	.42	.44	.46	.48	.08	.08
8	.67	.75	.22	.25	.44	.25	.0	.0	1.33	.75	.0	.0	.58	.44	.46	.35	.29	.22	.42	.32	.17	.13	.75	.56
9	.42	.71	.17	.29	.78	.67	.0	.0	.06	.05	.33	.28	.63	.72	.21	.24	.04	.04	.25	.28	.38	.43	.25	.28
10	.36	.62	.22	.38	.0	.0	.0	.0	1.17	1.00	.0	.0	.50	.57	.21	.24	.17	.19	.21	.24	.17	.19	.50	.57
11	.28	.60	.19	.40	.39	.41	.50	.53	.06	.06	.0	.0	.04	.06	.54	.76	.13	.18	.25	.35	.21	.30	.25	.35
12	.53	.79	.14	.21	1.33	1.00	.0	.0	.0	.0	.0	.0	.38	.38	.58	.58	.04	.04	.25	.25	.38	.38	.38	.38
13	.67	.80	.17	.20	1.28	.71	.0	.0	.06	.04	.33	.20	.54	.43	.42	.34	.29	.23	.25	.20	1.00	.80	.0	.0
14	.83	.79	.22	.21	.0	.0	.28	.13	1.72	.82	.11	.10	.63	.40	.50	.31	.46	.29	.33	.21	.83	.52	.42	.26
15	.69	.71	.28	.29	.0	.0	.22	.11	1.50	.77	.22	.12	.63	.43	.58	.40	.25	.17	.54	.37	.63	.43	.29	.20
16	.56	.72	.22	.28	.06	.04	1.00	.64	.0	.0	.50	.32	.21	.18	.54	.46	.42	.36	.33	.28	.54	.46	.29	.25
17	.33	.66	.17	.34	.0	.0	.17	.17	.83	.83	.0	.0	.29	.39	.42	.56	.04	.05	.33	.44	.17	.23	.25	.33
18	.31	.62	.19	.38	.11	.11	.89	.89	.0	.0	.0	.0	.33	.44	.04	.05	.38	.51	.21	.28	.46	.61	.08	.11
19	.42	.71	.17	.29	.11	.09	1.06	.91	.0	.0	.0	.0	.29	.33	.42	.48	.17	.19	.04	.05	.79	.90	.04	.05
20	.22	.85	.22	.15	.39	.13	2.11	.73	.06	.02	.33	.11	1.17	.54	.88	.40	.13	.06	.38	.17	.88	.40	.92	.42
21	.42	.88	.19	.12	1.28	.40	1.50	.47	.22	.07	.22	.06	.38	.16	1.83	.76	.21	.09	.08	.03	.79	.33	1.57	.64
22	.83	.81	.19	.19	.17	.08	.33	.16	.0	.0	1.56	.76	.71	.46	.58	.38	.25	.16	.17	.11	.50	.32	.88	.57
23	.37	.67	.19	.33	.17	.10	.78	.67	.0	.0	.22	.13	.17	.18	.50	.54	.25	.27	.08	.09	.38	.43	.42	.48
24	.36	.81	.31	.19	.44	.13	2.61	.78	.11	.03	.17	.05	.63	.25	1.46	.58	.42	.17	.33	.13	1.25	.50	.92	.37
Order of Presentation	.59	.74	.21	.26	.41	.25	.54	.34	.40	.25	.26	.16	.40	.33	.56	.47	.24	.20	.28	.23	.53	.44	.39	.33

T. Mean .40

The cell frequency means and percentages of the four information factors (Materials: Text, Questions; Content Types; Supportive Evidence; and Evaluative Load) are represented here according to the number of times an element of information occurred in each Unit.

APPENDIX B

BIBLIOGRAPHY OF SOCIAL STUDIES MATERIALS USED FOR PARAGRAPH CONSTRUCTION

HIGH SCHOOL SOCIAL STUDIES MATERIALS FOR EXPERIMENTAL STUDY

Britain

Arnstein, Walter. Britain--Yesterday and Today, 1830 to the Present. Lexington, Mass.: D. C. Heath, 1971.

Belasco and Kavunedus. Our Western Heritage. New York: Cambridge Book Company, Inc., 1970.

Britannica Junior Encyclopedia. Volumn 5, 1969.

Compton's Encyclopedia. Volume 7, 1973.

Harris, Kenneth. About Britain. London: Hodder & Stoughton, 1967.

Huizinga, J. H. Britain. Gateshead: Oxford University Press, 1970.

Kahn, Herman and Wiener, Anthony J. The Year 2000. 1967.

Osborne, John. Britain. New York: Time, Inc., 1967.

World Book Encyclopedia. Volume 6, 1973.

Yohi, Cahill, Gross, Gaitzner. Exploring Regions of the Eastern Hemisphere. Chicago: Follett, 1971.

China

Behind the Turmoil in Red China, U.S. News and World Report, Vol. 71, October 18, 1971.

Bell, Oliver. The Two Chinas. New York: A Division of Scholastic Magazines, Inc., 1964.

Boutwell, Clinton E. Voices of Emerging Nations. San Francisco: Leswing Communications, 1971.

Chen, Juan. The Cutlook for China's Economy. Current History, September, 1972.

China Giant, The: Perspectives on Communist China. Glenview, Illinois: Scott, Foresman and Company, 1967.

Crain, Clark N. et al. Oriental World: Ocean World. New York: W. H. Sadlier, Inc., 1971.

Durdin, Tillman. Commune's Barefoot Doctor is a Farmer, Too. New York Times, April 30, 1971.

Durdin, Tillman. China After Mao: Serious Hazards Lie Ahead. U.S. News and World Report, October 18, 1971.

Fairbank, John King. The United States and China. New York: The Viking Press, 1969.

Fessler, Loren. China, LIFE World Library, New York: Time, Inc., 1973.

Ford, Richard B. Tradition and Change in Four Societies: An Inquiry Approach. Holt Social Studies Curriculum, New York: Holt, Rinehart & Winston, Inc., 1968.

Gayn, Mark. Who After Mao? Foreign Affairs, Vol. 51, No. 2, January, 1973.

Israel, S., Roemer, N. H., and Durand, L. World Geography Today. New York: Holt, Rinehart & Winston, Inc., 1966.

James, Preston and Davis, Nelda. The Wide World: A Geography. New York: The Macmillan Company, 1962.

Jan, George P., ed. Government of Communist China. San Francisco: Chandler Publishing Company, 1966.

Kolevzon, Edward R. East Asia: China, Japan, Korea. Afro-Asian Regional Studies. Allyn and Bacon, Inc., 1970.

Kublin, Hyman. China. Boston: Houghton-Mifflin Company (Houghton Mifflin Social Studies Program - Regional Studies), 1968.

Liu, William T. Chinese Society under Communism: A Reader. New York: John Wiley and Sons, Inc., 1967.

The People's Republic of China: An Overview. Issues in United States Foreign Policy. Series No. 4 (presented in Social Education, Vol. 37, No. 1, January, 1973).

Prybyla, Jan S. Foreign Aid: The Chinese Are Coming. Current History, September, 1971.

Reed, James F. Eastern Lands. Boston: Allyn and Bacon, Inc., 1959.

Richman, Barry M. Industrial Society in Communist China. New York: Landon House, 1969.

Schurmann, Franz and Schell, Orville. The China Reader: Communist China. New York: Landon House, Vintage Books, 1967.

Snow, Edgar. Aftermath of the Cultural Revolution. The New Republic, Vol. 164, April 10, 1971.

Stravlianos, Leften S. and Hackett, Roger F. China: A Cultural Area in Perspective. Belmont, California: Allyn and Bacon, Inc., 1966.

Swisher, Earl. Today's World in Focus: China. New York: Ginn and Company, 1964.

Terrill, Ross. The 800,000,000: China and the World. Atlantic, Vol. 229, January, 1972.

Yohi, Cahill, Gross, Gaitzner. Exploring Regions of the Eastern Hemisphere. Chicago: Follett, 1971.

Japan

Behind the Consumer Boom. The Japan Times, June 21, 1970.

Crain, Clark N. et al. Oriental World: Ocean World. New York: W. H. Sadlier, Inc., 1971.

Fairbank, John, Reischauer, Edwin, and Craig, Albert. East Asia: The Modern Transformation. Boston: Houghton Mifflin Company, 1965.

Hunsberger, Warren S. Japan: Lessons in Enterprise. Area Studies in Economic Progress, Chicago: Scott, Foresman and Company, 1963.

Israel, S., Roemer, N. H., and Durand, L. World Geography Today. New York: Holt, Rinehart & Winston, 1966.

Japan's Export Surpluses. The Japan Times, June 9, 1970.

Japan's Foreign Aid Program. The Japan Times, August 7, 1970.

Kolevzon, Edward R. East Asia: China, Japan, Korea. Afro-Asian Regional Studies, Allyn and Bacon, Inc., 1970.

Kublin, Hyman, ed. Japan: Selected Readings. World Regional Studies, Boston: Houghton Mifflin Company, 1968.

Langer, Paul F. Japan: Yesterday and Today. Contemporary Civilizational Series. New York: Holt, Rinehart & Winston, Inc., 1966.

McKeown, Robin S., ed. Modernization in Japan. Asian Studies Inquiry Program, San Francisco: Field Educational Publications, Inc., 1969.

Price of High GNP. The Japan Times, May 29, 1970.

Seidensticker, Edward. Japan. LIFE World Library. New York: Time, Inc., 1961.

Welty, Paul Thomas. The Asians: Their Heritage and Their Destiny. 3rd edition. New York: J. B. Lippincott Company, 1970.

Yohi, Cahill, Gross, Gaitzner. Exploring Regions of the Eastern Hemisphere. Chicago: Follett, 1971.

Spain

Anderson, Charles W. The Political Economy of Modern Spain: Policy-Making in an Authoritarian System. Madison: University of Wisconsin Press, 1970.

Beejon, Trevor. Spain: Still Totalitarian. The Christian Century, Vol. 88, February 10, 1971.

Britannica Junior Encyclopedia, Volume 13, 1969.

Compton's Encyclopedia, Volume 19, 1973.

Economic and Social Development Program for Spain, 1964-1967. Prepared by the Commission for Economic and Social Development Planning, Presidency of the Government of Spain, Baltimore: John Hirini Press, 1965.

Hills, George. Franco: The Man and His Nation. New York: Macmillan, 1967.

Maigues, Gines M. Spain. Grand Rapids, Michigan: Fideler, 1959.

Painton, Frederick C. Changing Course for Franco's Spain. U.S. News and World Report, Vol. 69, November 16, 1970.

Payne, Stanley. Franco's Spain. New York: Thomas Crowell, 1967.

Thomas, Hugh. Spain. New York: Time, Inc., 1962.

Welles, Benjamin. Spain: The Gentle Anarchy. Frederick A. Praeger, 1965.

Whitaker, Arthur P. Spain and Portugal: Continuity and Change. Current History, May, 1970.

World Book Encyclopedia, Volume 18, 1973.

APPENDIX C

2x2 DESIGNS FOR PARAGRAPH CONSTRUCTION

CONTENT TYPE I INFORMATION: Geography-Economics since 1945

Paragraph #1

	WESTERN	ASIAN
Urbanized/industrial nations	Britain	Japan
Semi-industrial agrarian nations	Spain	China

Paragraph #3

	WESTERN	ASIAN
Exploited resources; High export/import exchange	Britain	Japan
Has not exploited own resources; Low export/import exchange	Spain	China

Paragraph #2

	WESTERN	ASIAN
Moderate GNP	Britain	Japan
Low GNP	Spain	China

Paragraph #4

	WESTERN	ASIAN
Topography/ insular nation	Britain	Japan
Topography/ continental nation with sea coast	Spain	China

CONTENT TYPE II INFORMATION: History-Culture before 1945

Paragraph #1

	WESTERN	ASIAN
World Power early 20th century	Britain	Japan
Lesser Power early 20th century	Spain	China

Paragraph #2

	WESTERN	ASIAN
Changing cultural pattern	Britain	Japan
Traditional cultural pattern	Spain	China

Paragraph #3

	WESTERN	ASIAN
Multi-religious heritage	Britain	Japan
Singular religious heritage	Spain	China

Paragraph #4

	WESTERN	ASIAN
Intelligentsia/ avante-garde	Britain	Japan
Intelligentsia/ reactionary	Spain	China

CONTENT TYPE III INFORMATION: Social Practices since 1945

Paragraph #1

	WESTERN	ASIAN
High Literacy	Britain	Japan
Moderate Literacy	Spain	China

Paragraph #2

	WESTERN	ASIAN
Moderate-High SES	Britain	Japan
Low-Moderate SES	Spain	China

Paragraph #3

	WESTERN	ASIAN
Social Mobility	Britain	Japan
Mobility Controlled	Spain	China

Paragraph #4

	WESTERN	ASIAN
Variety of life styles	Britain	Japan
Homogeneity of life style	Spain	China

CONTENT TYPE IV INFORMATION: Politics-Government since 1945

Paragraph #1

	WESTERN	ASIAN
Libertarian political model	Britain	Japan
Authoritarian political model	Spain	China

Paragraph #2

	WESTERN	ASIAN
Functional Leadership/ Prime Minister	Britain	Japan
Charismatic Leadership	Spain	China

Paragraph #3

	WESTERN	ASIAN
Multi-party system	Britain	Japan
Elite/single party system	Spain	China

Paragraph #4

	WESTERN	ASIAN
Foreign relations with free world for int'l security	Britain	Japan
Foreign relations for ideological and nat'l security with nations of similar ideological systems	Spain	China

TABLE I.

Relationship Between 2 x 2 Design and Selection of Countries for Construction of Paragraphs*

TECHNOLOGICAL DEVELOPMENT	GEOGRAPHICAL LOCATION: Western/Europe	GEOGRAPHICAL LOCATION: Eastern/Asia
Modern	Britain	Japan
Emergent	Spain	China

* Each cell in the design includes 64 paragraphs.

TABLE II.

Example of Assignment of Student by Reading Ability and Sex to Each Cell of the Design Defined by Factors Used in the Construction or Combination of Paragraphs

CELL N°1

SUBJECT FACTORS:

SEX

READING ABILITY	Male	Female
High	2 Students	2 Students
Moderate	2 Students	2 Students

CONTEXT FACTORS USED FOR PARAGRAPH CONSTRUCTION OR COMBINATION:

Geographical Location of Country, Europe
Technological Development of Country, Modern
Subject Matter Content for Country
Evaluative Load for Country
Supportive Evidence for Country

PASSAGE SET FOR SUBJECTS IN CELL N°1

BRITAIN

Geographic-economic, paragraph #1, positive, judgmental
Geographic-economic, paragraph #2, positive, factual
Geographic-economic, paragraph #3, negative, judgmental
Geographic-economic, paragraph #4, negative, factual

TABLE III.

Example of a Within Subjects Cell of the 1/64 Fraction of a 2^{12} Design

BLOCK x SUBJECT ASSIGNMENT

I	II	III	IV	V
COUNTRY	CONTENT	PARAGRAPH #	POSITIVE/NEGATIVE EVALUATIVE LOAD	JUDGMENTAL/FACTUAL SUPPORTIVE EVIDENCE
China	Politics/Gov't	First	Positive	Judgmental
"	"	Second	Negative	"
"	"	Third	Positive	Factual
"	"	Fourth	Positive	Judgmental

I, II Location and Technology of Country (two, two-level factors) = CHINA
III Content Subject Matter (two, two-level factors) = POLITICS/GOV'T
IV Evaluative Load x Paragraphs (four, two-level factors) = +/-
V Supportive Evidence x Paragraphs (four, two-level factors) = J/F

APPENDIX D

INTRODUCTION AND PRE TEST MATERIALS

EXPERIMENTAL STUDY ON SOCIAL STUDIES INFORMATION

INTRODUCTION

The purpose of this experimental study is to explore how students make sense of information from social studies textbooks and supplementary materials. Most high school social studies texts identify or emphasize certain viewpoints on issues by using pieces of either positive, neutral, or negative information. In addition, writers of social studies materials support their viewpoints by using either judgmental evidence (i.e. information that cannot be systematically observed or tested) or factual evidence (i.e. information which can be systematically observed or tested). Your task this morning will be to rate some paragraphs with respect to these factors: (1) positive and negative information, and (2) judgmental and factual evidence.

You have each received a booklet. Please note at this time whether you have a number code on the front cover of your booklet. If you do not, please raise your hand and a proctor will check with you. No names will be identified with a booklet at anytime after the completion of the experiment. This study will not compare your scores with the scores of other students. Remember, this is not a test. We are interested mainly in your reaction to the content of each paragraph. Therefore, it is very important you do the best you can.

OVERVIEW OF TASKS

There are several sections to this study. Let us go over them briefly:

(1) First you will fill-out an identification questionaire;

(2) Second you will do a word association task in which you describe your position on a number of issues about foreign countries;

(3) Third you will have two practice sessions; and

(4) Finally, you will be on your own to do the tasks, with a refreshment break mid-way into the study.

Are there any questions?

TURN THE PAGE

IDENTIFICATION QUESTIONAIRE

Directions: Please fill-in the appropriate answers to the following questions:

1. Your Sex: (circle) MALE FEMALE

2. Last completed grade in high school: (circle) 11 12

3. Have you studied a foreign language? (circle) YES NO

   If you answered 'YES', please answer the following questions:

   3a. Which language(s)? List:

   _____

   3b. How many years have you studied the language(s)?

   _____

4. Have you traveled abroad to a foreign country (e.g. Mexico, France, India) within the last five years? (circle) YES NO

   If you answered 'YES', please list the countries:

   _____

5. Are you a member of a social organization (e.g. school clubs, Scouts)? (circle) YES NO

   If you answered 'YES', please answer the following questions:

   5a. Which social group(s) are you a member of?

   _____

   name of social organization(s)

   5b. How long have you been a member?

   _____

   years of membership

TURN THE PAGE

IDENTIFICATION QUESTIONAIRE: continued

6. Are you a member of a religious organization (e.g. church, synagogue, Young Life)? (circle)

YES NO

If you answered 'YES', please answer the following questions:

6a. Which religious group? List name of organization and activities.

_____ _____

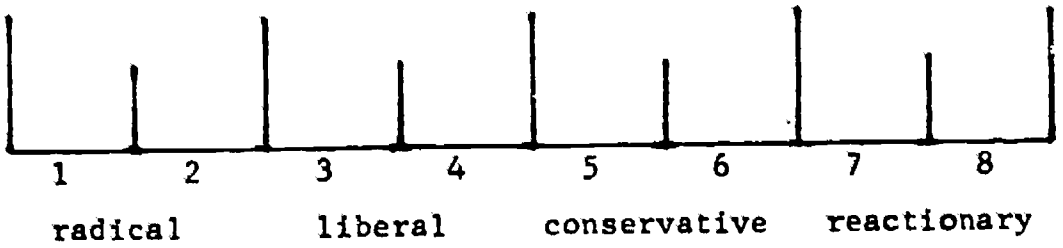
name of religious group(s) activities

6b. Please write an estimate of the number of times you have participated in your religious organization (e.g. times you have attended church of Young Life meetings) during the last two months:

_____

number of times

7. What political label do you usually identify with?
Mark an 'X' on the line below which <u>best</u> indicates your general political views:



WAIT UNTIL YOU ARE TOLD TO TURN THE PAGE

GENERAL IMPRESSION AND WORD ASSOCIATIONS

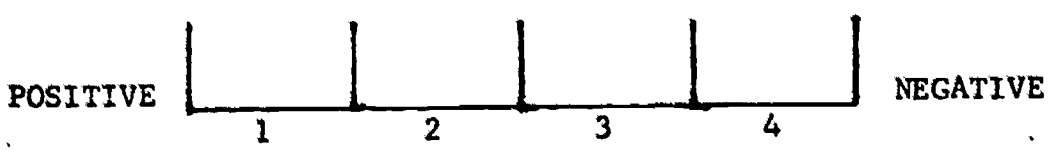
DIRECTIONS:

On each of the following eight pages, there will be a name of a different country for you to give a general impression about and describe. Specificially,

(1) You will be asked to rate your general impression about a country on a four-point scale from positive to negative. You will follow this procedure for all eight countries.

Example

How would you describe your general impression about the United States of America?
Mark an 'X' in the space below which best indicates your impression.



1--indicates that your impression is HIGHLY POSITIVE
2--indicates that your impression is MORE POSITIVE than negative
3--indicates that your impression is MORE NEGATIVE than positive
4--indicates that your impression is HIGHLY NEGATIVE

(2) You will then describe that country by marking the list of words on the page. Let's take a look to see how this is done. Each pair of words forms a scale.
For example, if you feel that the country at the top of the page is very closely related to one end of the scale, you should place a check mark as follows:

cold __X__:_____:_____:_____:_____:_____:_____ hot

or

cold _____:_____:_____:_____:_____:_____:__X__ hot

If you feel that the country at the top of the page is closely related to one or the other end of the scale, you should place a check mark as follows:

large _____:__X__:_____:_____:_____:_____:_____ small

or

large _____:_____:_____:_____:_____:__X__:_____ small

If you feel the country at the top of the page is only slightly related to one or the other end of the scale, you should place a check mark as follows:

good _____:_____:__X__:_____:_____:_____:_____ bad

or

good _____:_____:_____:_____:__X__:_____:_____ bad

If you consider both sides equally related with the country at the top of the page, you should place a check as follows:

honest _____:_____:_____:__X__:_____:_____:_____ dishonest

TURN THE PAGE

DIRECTIONS: continued on WORD ASSOCIATIONS

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the country you are describing.

IMPORTANT

(a) Place your check marks in the middle of spaces, not on the boundaries:

THIS X NOT THIS

____:____:__X__:____:____:____:____

(b) Be sure you check every scale for every concept--do not omit any.

(c) Never put more than one check mark on a single scale.

Do not spend more than a few seconds marking each scale. Your first impression is what we would like to learn about.

The countries you will describe are listed below in order:

ARGENTINA, BRITAIN, CHINA, FRANCE, JAPAN, NORTH VIETNAM, SPAIN, THAILAND

BRITAIN

GENERAL RATING:

How would you describe your general impression about BRITAIN?
Mark an 'X' in the space below which best indicates your impression.

1--indicates that your impression is HIGHLY POSITIVE
2--indicates that your impression is MORE POSITIVE than negative
3--indicates that your impression is MORE NEGATIVE than positive
4--indicates that your impression is HIGHLY NEGATIVE

WORD ASSOCIATIONS:

BRITAIN

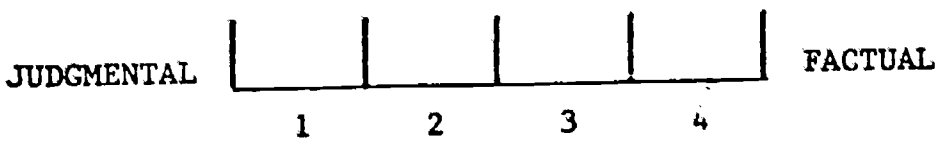
FAST	_____:_____:_____:_____:_____:_____:_____	SLOW
SIMPLE	_____:_____:_____:_____:_____:_____:_____	COMPLEX
UNSTABLE	_____:_____:_____:_____:_____:_____:_____	STABLE
FAIR	_____:_____:_____:_____:_____:_____:_____	UNFAIR
POOR	_____:_____:_____:_____:_____:_____:_____	RICH
WEAK	_____:_____:_____:_____:_____:_____:_____	STRONG
CLEAN	_____:_____:_____:_____:_____:_____:_____	DIRTY
PESSIMISTIC	_____:_____:_____:_____:_____:_____:_____	OPTIMISTIC
LENIENT	_____:_____:_____:_____:_____:_____:_____	SEVERE
PEACEFUL	_____:_____:_____:_____:_____:_____:_____	BELLIGERENT

APPENDIX E

EXPERIMENTAL MATERIALS FOR SUBJECTS IN BLOCK IV

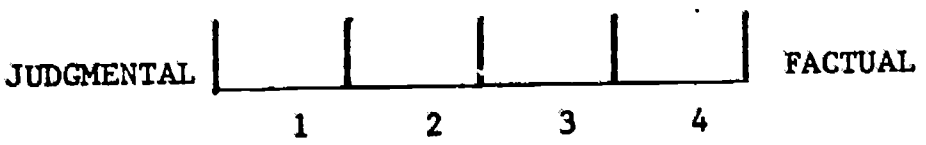
Japan's imperialistic interest in Korea (1910-1945) was chiefly for self-interests. During the thirty-five years that the Japanese ruled Korea, the people were not granted civil rights. For example, the freedoms of Koreans were sharply reduced. The Korean language was not allowed to be used. The people were conscripted into the Japanese army. All businesses of any importance were taken over by the Japanese. The Japanese further confiscated large amounts of natural resources and agricultural products from Korea to serve the domestic and military interests of Japan.

MARK AN 'X' IN THE SPACE BELOW WHICH BEST INDICATES FACTUAL OR JUDGMENTAL EVIDENCE.



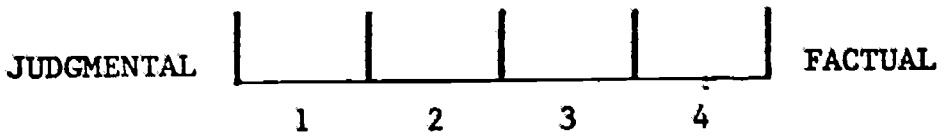
There have been major epochs of history when the Japanese did not readily adapt to Western (European) institutions and ideas. For example, during the 1600's, Japanese leaders concluded that Christianity would upset the existing social and political order. The government forbid missionaries to enter Japan. Japanese converts were considered possible allies of anti-government or Western invaders. They were ordered to renounce their faith. Those who refused were executed. Christianity was finally expelled from Japan during a revolt in the southern island of Kyushu. Thousands of Christians and their families were killed. As a result of these actions, the forces for Christianity in Japan were destroyed.

MARK AN 'X' IN THE SPACE BELOW WHICH BEST INDICATES FACTUAL OR JUDGMENTAL EVIDENCE.



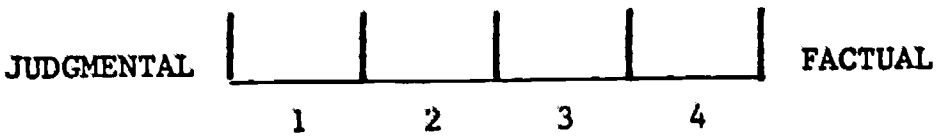
Religion, in the Western sense of the word, has been a ritual in Japan. It is more a natural expression of the tea ceremony or flower arranging, than the ethical teaching of Western religions. Today religion is less important than ever. The Japanese people belong to mutually compatible Buddhist sects, yet there are seldom any strong feelings about religious affiliation. This applies also to the Shinto religion, which for the Japanese is more of an accepted ritual or formality than a religious faith. There exists in Japan, compared to Western standards, a spiritual void: a people without religion.

MARK AN 'X' IN THE SPACE BELOW WHICH BEST INDICATES FACTUAL OR JUDGMENTAL EVIDENCE.



Some Japanese intellectuals studied the link between Christianity and the practice of democracy. As stated by Yoshino, an influential scholar in the 1920's, "Christian belief, as it asserts itself in every aspect of society, is democracy." Christianity entered Japan again in the latter part of the 17th century as part of Western culture. Many of the intellectuals who accepted it were concerned with Japan's task of strengthening the society and gaining equality with the West. Christianity was very popular in both urban and rural areas.

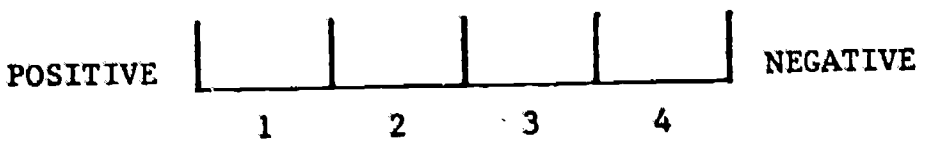
MARK AN 'X' IN THE SPACE BELOW WHICH BEST INDICATES FACTUAL OR JUDGMENTAL EVIDENCE.



QUESTIONS ON JAPAN

GENERAL RATING:

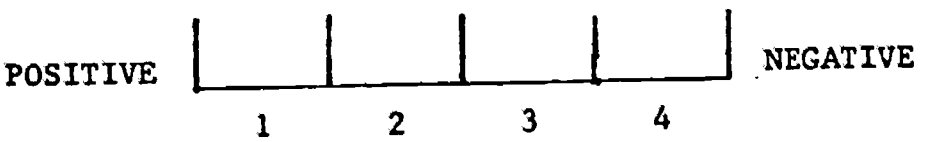
1. How would you describe your general impression about JAPAN?
   Mark an 'X' in the space below which best indicates your impression.



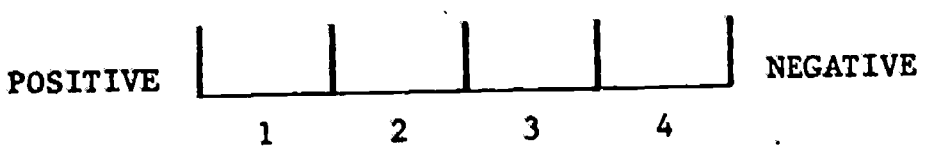
1--indicates that your impression is HIGHLY POSITIVE
2--indicates that your impression is MORE POSITIVE than negative
3--indicates that your impression is MORE NEGATIVE than positive
4--indicates that your impression is HIGHLY NEGATIVE

PARAGRAPH RATINGS:

2. How would you describe your impression about the history and culture of JAPAN?
   Mark an 'X' in the space below which best indicates your impression.



3. How would you react to the possibility of living four years in JAPAN?
   Mark an 'X' in the space below which best indicates your impression.



TRUE/FALSE QUESTIONS:

CIRCLE the correct answer for each question. T is True; F is False.

4. The Japanese curtailed the rights of the Koreans. T F

5. The Japanese government has always encouraged freedom of worship. T F

APPENDIX F

TABLES 2 THROUGH 10 AND FIGURE 2 OF ANALYSES OF VARIANCE FOR MAIN FACTORS (ANALYSIS I)

This appendix presents Tables 2 through 10 and Figure 2, reporting the means and the first series of analyses of variance for the three dependent measures (General, Specific, and Applied Impressions) as well as the relevant means for these measures and the Combined Impression measure of all the main factors in the design.

TABLE 2.

Overall Impression Means for Cumulative Evaluative Loads

Evaluative Load Sets	Means for Combined Impression	Description of Cumulative Effects of Evaluative Load
NNNN	2.63	overall impression remains negative
NNNP	2.53	overall impression decreases slighty in negativity
NNPP	2.39	overall impression is unchanged
NPPP	2.24	overall impression is slighty positive
PPPP	2.14	overall impression is increasingly positive

TABLE 3.

Means of Dependent Measures for the Between Subjects Factors in Analysis I

DEPENDENT MEASURES	READING ABILITY		STATE ENTRY ATTITUDE	
	High	Moderate	Positive	Negative
General Impression	2.46	2.21	2.18	2.50
Specific Impression	2.60	2.30	2.33	2.57
Applied Impression	2.49	2.33	2.27	2.56
Combined Impression	2.52	2.28	2.26	2.54

TABLE 4.

Means of Dependent Measures for the Twelve Main Within Factors in Analysis I *

Dependent Measures	Location (D)		Technology (E)		Content (F,G)				Eval #1		Eval #2		Eval #3		Eval #4		Supp #1		Supp #2		Supp #3		Supp #4	
	W	E	M	E	G/E	H/C	SP	POL	+	-	+	-	+	-	+	-	J	F	J	F	J	F	J	F
GENERAL IMPRESSION	2.3	2.4	2.4	2.5	2.3	2.4	2.3	2.5	2.3	2.4	2.3	2.3	2.3	2.4	2.2	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
SPECIFIC IMPRESSION	2.4	2.5	2.3	2.6	2.4	2.3	2.4	2.8	2.4	2.5	2.4	2.5	2.3	2.6	2.3	2.6	2.5	2.4	2.5	2.4	2.5	2.4	2.5	2.4
APPLIED IMPRESSION	2.2	2.6	2.1	2.7	2.4	2.4	2.4	2.5	2.3	2.5	2.4	2.4	2.4	2.4	2.3	2.5	2.4	2.4	2.4	2.4	2.5	2.4	2.4	2.4
COMBINED IMPRESSION	2.3	2.5	2.2	2.6	2.4	2.3	2.3	2.6	2.3	2.5	2.4	2.4	2.3	2.5	2.3	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4

*Key for Table

W Western Countries (Britain, Spain)
E Eastern Countries (Japan, China)
M Modern Technology Countries (Britain, Japan)
E Emergent Technology Countries (Spain, China)
G/E Geographic-economic Content
H/C History-culture Content
SP Social Practices Content

\+ Positive Evaluative Load, Paragraphs #1, 2, 3, 4
\- Negative Evaluative Load, Paragraphs #1, 2, 3, 4
J Judgmental Supportive Evidence, Paragraphs #1, 2, 3, 4
F Factual Supportive Evidence, Paragraphs #1, 2, 3, 4

TABLE 5.

Analyses of Variance for General, Specific, and Applied Impression Measures of the Main Factors in Analysis I

General Impression					Specific Impression				Applied Impression			
Codes	Source	df	MS	F	Source	df	MS	F	Source	df	MS	F
	Between Subjects											
A	Reading Ability (High/Moderate)	1	8.3	11.2**	A	1	11.3	7.0	A	1	3.1	< 1
B	Stated Entry Attitude (More Positive/More Negative)	1	12.8	17.4**	B	1	7.5	4.7	B	1	10.7	2.9
	A x B	1	1.0	1.4	A x B	1	1.8	1.1	A x B	1	1.5	< 1
	N(AB)	28	.7		N(AB)	28	1.6		N(AB)	28	3.7	
	Within Subjects		MS(E)				MS(E)				MS(E)	
D	Geographical Location of Countries (West:Britain,Spain/East:Japan,China)	1	.6	1.0	D	1	.3	< 1	D	1	18.8	15.0**
E	Technological Development of Countries (Modern:Britain,Japan/Emergent:Spain,China)	1	19.1	24.8**	E	1	10.7	17.8**	E	1	43.9	24.7**
F	Content #1 (Social Practices,Politics/ Geography-economics,History-culture)	1	.3	2.5	F	1	4.9	9.3**	F	1	.5	3.4
G	Content #2 (Geography-economics,Politics/ History-culture,Social Practices)	1	.2	1.7	G	1	10.7	27.2**	G	1	.4	3.8
H - K	Evaluative Load (Positive/Negative)											
H	Paragraph #1	1	2.4	7.1	H	1	3.4	4.3	H	1	2.5	9.1**
I	Paragraph #2	1	.0	< 1	I	1	.6	< 1	I	1	.0	< 1
J	Paragraph #3	1	1.6	4.3	J	1	13.8	35.6**	J	1	.5	1.7
K	Paragraph #4	1	7.8	9.7**	K	1	14.4	30.8**	K	1	2.5	8.0**
L	[a]Linearity of Evaluative Load Across Passage Sets (PPPP,PPPN,PPNN,PNNN,NNNN)	1	2.7	29.2**	L	1	8.0	50.2**	L	1	1.3	25.4**
M - Q	Supportive Evidence (Judgmental/Factual)											
M	Paragraph #1	1	.0	< 1	M	1	.3	< 1	M	1	.1	< 1
O	Paragraph #2	1	.0	< 1	O	1	1.5	2.3	O	1	.1	< 1
P	Paragraph #3	1	.6	2.3	P	1	.3	< 1	P	1	.8	4.6
Q	Paragraph #4	1	.4	3.4	Q	1	.1	< 1	Q	1	.0	< 1
	D x F	1	.2	< 1	D x F	1	2.8	14.9**	D x F	1	.0	< 1
	E x G	1	.0	< 1	E x G	1	2.5	10.8**	E x G	1	.4	4.0
	F x G	1	2.4	10.5**	F x G	1	1.5	2.8	F x G	1	.5	5.7
	D x F x A	1	2.7	14.7**	D x F x A	1	1.8	9.2**	D x F x A	1	.4	< 1
	D x F x B	1	.0	1.3	D x F x B	1	2.0	10.6**	D x F x B	1	.1	< 1

** $p < .01$

[a]Linear polynomial and paragraph contrasts are not independent.

TABLE 6.

Mean Scores of all dependent measures by Countries and Content Areas

Dependent Measures	BRITAIN				SPAIN				JAPAN				CHINA			
	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL *
General Impression	2.20	2.25	2.00	2.17	2.25	2.46	2.42	2.54	2.25	2.04	2.08	2.33	2.54	2.75	2.63	2.88
Specific Impression	2.38	2.42	2.29	2.38	2.71	2.42	2.29	3.04	2.25	2.08	2.38	2.71	2.54	2.33	2.58	3.00
Applied Impression	1.92	1.96	1.83	1.83	2.29	2.33	2.42	2.54	2.42	2.33	2.29	2.42	3.00	3.00	3.00	3.25
Combined Impression	2.17	2.21	2.04	2.13	2.42	2.40	2.38	2.71	2.31	2.15	2.25	2.49	2.69	2.69	2.74	3.04

* GEO = GEOGRAPHIC-ECONOMIC

HIS = HISTORY-CULTURE

SOCP = SOCIAL PRACTICES

POL = POLITICS-GOVERNMENT

TABLE 7.

Mean Scores of all Dependent Measures for High Reading Ability Subjects
by Countries and Content Areas in Analysis I

Dependent Measures	BRITAIN				SPAIN				JAPAN				CHINA			
	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL*
GENERAL IMPRESSION	2.6	2.4	2.0	1.9	2.5	2.7	2.6	2.7	2.3	2.0	2.3	2.5	2.5	2.8	2.8	3.3
SPECIFIC IMPRESSION	2.4	2.6	2.3	2.2	3.0	2.8	2.5	3.3	2.3	1.9	2.5	2.9	2.6	2.3	2.8	3.3
APPLIED IMPRESSION	2.0	2.0	1.8	1.7	2.4	2.4	2.5	2.7	2.6	2.5	2.5	2.6	2.9	2.9	3.0	3.3
COMBINED IMPRESSION	2.3	2.3	2.0	1.9	2.6	2.6	2.5	2.9	2.4	2.1	2.4	2.7	2.7	2.7	2.8	3.3

TABLE 8.

Mean Scores of all Dependent Measures for Moderate Reading Ability Subjects
by Countries and Content Areas in Analysis I

Dependent Measures	BRITAIN				SPAIN				JAPAN				CHINA			
	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL*
GENERAL IMPRESSION	1.8	2.1	2.0	2.4	2.0	2.3	2.3	2.4	2.3	2.1	1.9	2.2	2.6	2.8	2.5	2.5
SPECIFIC IMPRESSION	2.3	2.3	2.3	2.6	2.4	2.1	2.1	2.8	2.2	2.3	2.3	2.5	2.5	2.3	2.4	2.8
APPLIED IMPRESSION	1.8	1.9	1.9	2.0	2.2	2.3	2.3	2.4	2.3	2.2	2.1	2.3	3.1	3.1	3.0	3.2
COMBINED IMPRESSION	2.0	2.1	2.1	2.3	2.2	2.2	2.2	2.6	2.2	2.2	2.1	2.3	2.7	2.7	2.6	2.8

* GEO Geographic-economics
HIS History-culture
SOCP Social Practices
POL Politics-government

TABLE 9.

Mean Scores of all Dependent Measures for More Positive Stated Entry Attitude of Subjects by Countries and Content Areas in Analysis I

Dependent Measures	BRITAIN				SPAIN				JAPAN				CHINA			
	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL*
GENERAL IMPRESSION	2.0	2.2	1.9	2.0	2.?	2.2	2.0	2.3	2.1	2.1	1.8	2.1	2.3	2.8	2.6	2.9
SPECIFIC IMPRESSION	2.7	2.5	2.0	2.3	?.3	2.2	1.9	2.8	1.9	?.3	2.3	2.6	2.3	2.1	2.8	3.1
APPLIED IMPRESSION	1.8	1.8	1.8	1.8	1.9	2.0	2.0	..1	2.3	2.4	2.1	2.2	2.8	2.8	2.o	3.2
COMBINED IMPRESSION	2.1	2.2	1.9	2.0	2.1	2.1	2.0	2.4	2.1	2.3	2.1	2.3	2.4	2.6	2.7	3.1

TABLE 10.

Mean Scores for all Dependent Measures for More Negative Stated Entry Attitude of Subjects by Countries and Content Areas in Analysis I

Dependent Measures	BRITAIN				SPAIN				JAPAN				CHINA			
	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL*
GENERAL IMPRESSION	2.4	2.3	2.1	2.3	2.3	2.8	2.8	2.8	2.4	2.0	2.3	2.6	2.8	2.8	2.7	2.8
SPECIFIC IMPRESSION	2.1	2.3	2.6	2.5	3.1	2.7	2.7	3.3	2.6	1.9	2.5	2.8	2.8	2.6	2.4	2.9
APPLIED IMPRESSION	2.1	2.1	1.8	1.9	2.7	2.7	2.8	3.0	2.6	2.3	.5	2.7	3.3	3.2	3.2	3.3
COMBINED IMPRESSION	2.2	2.3	2.2	2.3	2.7	2.7	2.8	3.0	2.5	2.1	2.4	2.7	2.9	2.8	2.8	3.0

* GEO Geographic-economics
HIS History-culture
SOCP Social Practices
POL Politics-government

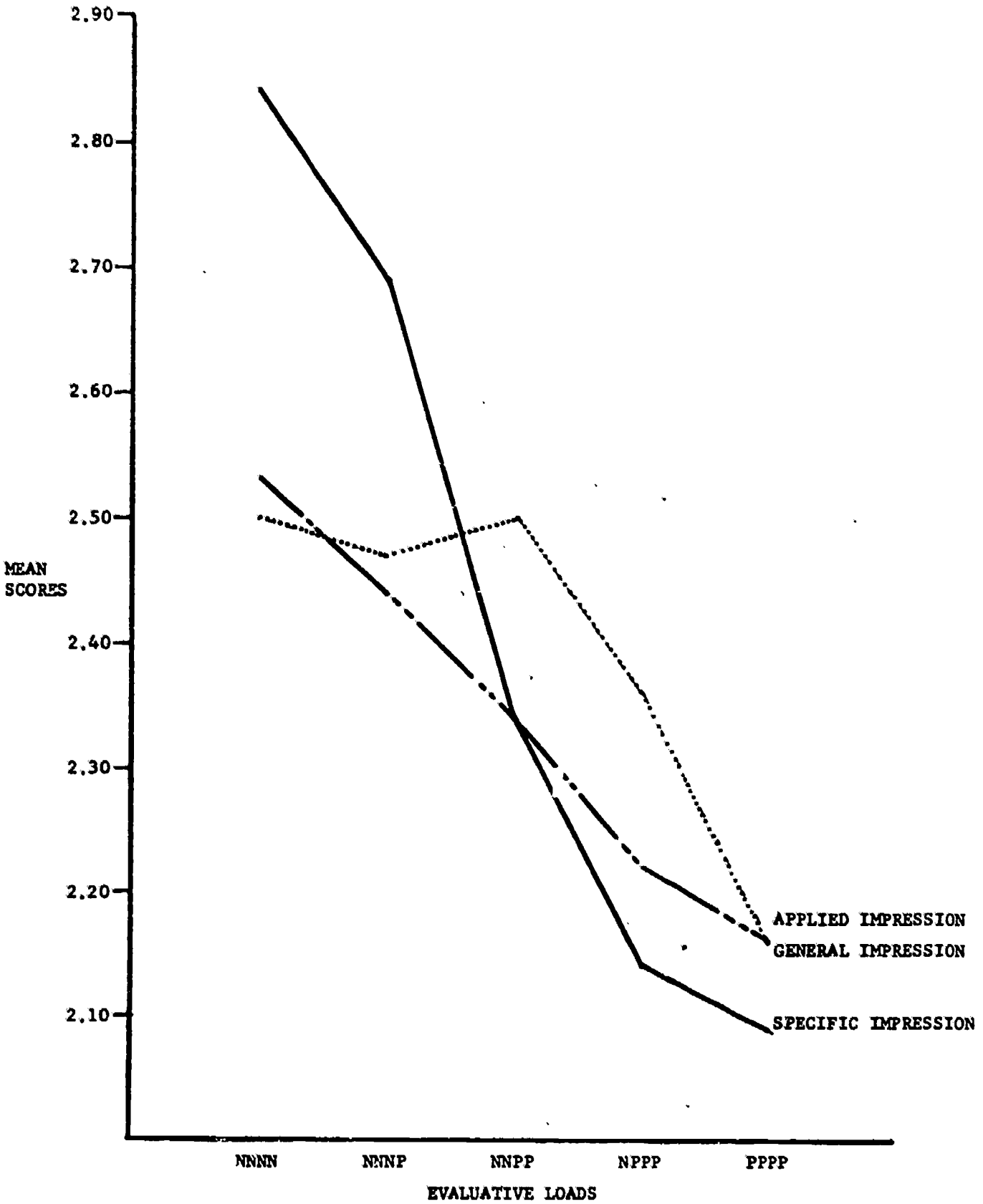


Figure 2.

Mean impression ratings of Specific, General, and Applied Impression measures as a function of stimulus polarity (NNNN,NNNP, NNPP,NPPP,PPPP, denoting a passage set highly negative, moderately negative, neutral, moderately positive, and highly positive in value).

APPENDIX G

TABLES 11 THROUGH 14 OF ANALYSES OF VARIANCE FOR CONTENT FACTORS (ANALYSIS II)

This appendix presents Tables 11 through 14, reporting the second series of analyses of variance for the four dependent measures (General, Specific, Applied, and Combined Impressions) as well as the relevant means for these measures for all content factors. For this second analysis, the data was reorganized to further investigate the effects of content as a contextual factor. Twelve contrast scores were generated for each of the four measures by averaging across blocks four sets of three contrast scores (i.e., by summing over all cells with the NNNN and/or NNNP combinations, the NNPP combination, and the NPPP and/or PPPP combinations within each specific content subject matter). In Table 11 are presented the means of the averaged scores for content areas by passage sets of evaluative load; and in Table 12 analyses of variance results for the Combined Impression measure are given. A test for the linear function of the contrast scores by content subject matter was made. A highly significant effect was found ($p < .01$). Table 13 presents the analysis of variance findings for the three dependent measures (General, Specific, and Applied Impressions). Finally, in Table 14 are presented the means for the between-subjects factors of all the four dependent measures.

TABLE 11.

Mean Scores of all Dependent Measures for Content Factors by Passage Sets of Evaluative Loading in Analysis II
(Negative Load: NNNN and/or NNNP; Neutral Load: NNPP; Positive Load: NPPP and/or PPPP)

Dependent Measures	GEOGRAPHIC-ECONOMICS			HISTORY/CULTURE			SOCIAL PRACTICES			POLITICS/GOVERNMENT		
	NNNN/ NNNP	NNPP	NPPP PPPP	NNNN/ NNNP	NNPP	NPPP/ PPPP	NNNN/ NNNP	NNPP	NPPP/ PPPP	NNNN/ NNNP	NNNP	NPPP/ PPPP
GENERAL IMPRESSION	2.5	2.3	2.0	2.7	2.3	2.1	2.5	2.3	2.0	2.8	2.5	2.1
SPECIFIC IMPRESSION	2.9	2.4	2.1	2.7	2.2	1.9	2.8	2.3	1.9	3.1	2.7	2.4
APPLIED IMPRESSION	2.5	2.5	2.2	2.7	2.4	2.1	2.6	2.4	2.1	2.7	2.5	2.3
COMBINED IMPRESSION	2.6	2.4	2.1	2.7	2.3	2.0	2.6	2.3	2.0	2.9	2.6	2.3

TABLE 12.

Analyses of Variance on Combined Measures (General, Specific, Applied Impressions)
Comparing Averaged Contrast Scores on Content Factors in Analysis II

Codes	Source	df	MS	F
	Between Subjects			
A	Reading Ability (High/Moderate)	1	14.7	5.3
B	Stated Entry Attitude (More Positive/More Negative)	1	22.8	8.2**
	A x B	1	.1	<1
	N(AB)	28	2.8	
	Within Subjects		MS(E)	
C	Impression Measure (General/Specific/Applied)	2	1.2	8.0**
	NC(AB)	56	.8	
F	Content #1 (Social Practices,Politics/Geography-economics,History-culture)	1	.3	10.1**
G	Content #2 (Geography-economics,Politics/History-culture,Social Practices)	1	1.2	4.4
L	[a]Linearity of Evaluative Load Across Passage Sets (PPPP,PPPN,PPNN,PNNN,NNNN)	1	.6	111.6**
	F x C	2	.1	4.0
	G x C	2	.1	20.2**
	L x C	2	.2	10.3**
	F x G	1	.6	5.7

** $p < .01$

[a]Linear polynomial and paragraph contrasts are not independent.

TABLE 13.

Analyses of Variance for General, Specific, and Applied Impression Measures for Content Factors in Analysis II

General Impression					Specific Impression				Applied Impression			
Codes	Source	df	MS	F		df	MS	F		df	MS	F
	Between Subjects				Between Subjects				Between Subjects			
A	Reading Ability (High/Moderate)	1	5.8	10.8**	A	1	7.5	5.8	A	1	2.3	< 1
B	Stated Entry Attitude (More Positive/More Negative)	1	9.7	18.3**	B	1	5.4	4.2	B	1	8.0	3.0
	A x B	1	.7	1.3	A x B	1	.6	< 1	A x B	1	1.4	< 1
	N(AB)	28	.5		N(AB)	28	1.3		N(AB)	28	2.6	
	Within Subjects		MS(E)		Within Subjects (E)				Within Subjects (E)			
F	Content #1 (Social Practices, Politics/ Geography-economics, History-culture)	1	.4	4.4	F	1	3.7	9.7**	F	1	.3	2.1
G	Content #2 (Geography-economics, Politics/ History-culture, Social Practices)	1	.1	< 1	G	1	8.9	15.1**	G	1	.6	1.2
L	[a]Linearity of Evaluative Load Across Passage Sets (PPPP, PPPN, PPNN, PNNN, NNNN)	1	20.2	58.3**	L	1	39.0	126.7**	L	1	13.3	43.8**
	F x G	1	1.9	8.8**	F x G	1	1.0	2.2	F x G	1	.5	2.8

** $p < .01$

[a]Linear polynomial and paragraph contrasts are not independent.

TABLE 14.

Means of Dependent Measures for the Between Subject Factors in Analysis II

Dependent Measures	READING ABILITY								STATED ENTRY ATTITUDE							
	HIGH READING ABILITY				MOD READING ABILITY				MORE POSITIVE ATTITUDE				MORE NEGATIVE ATTITUDE			
	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL	GEO	HIS	SOCP	POL
GENERAL IMPRESSION	2.4	2.5	2.4	2.6	2.1	2.2	2.2	2.3	2.1	2.3	2.1	2.3	2.5	2.4	2.5	2.6
SPECIFIC IMPRESSION	2.6	2.4	2.5	2.9	2.3	2.1	2.2	2.6	2.3	2.2	2.2	2.7	2.6	2.4	2.5	2.9
APPLIED IMPRESSION	2.4	2.5	2.5	2.6	2.3	2.3	2.3	2.4	2.2	2.3	2.3	2.3	2.6	2.5	2.5	2.7
COMBINED IMPRESSION	2.5	2.5	2.4	2.7	2.2	2.2	2.2	2.5	2.2	2.2	2.2	2.4	2.5	2.4	2.5	2.7

APPENDIX H

TABLES 15 THROUGH 18 of ANALYSES OF VARIANCE FOR COUNTRY FACTORS (ANALYSIS III)

This appendix presents Tables 15 through 18, reporting the third series of analyses of variance for the four dependent measures (General, Specific, Applied, and Combined Impressions) as well as the relevant means for these measures of all country factors. For this third analysis, the data was reorganized to further investigate the effects of country as a contextual factor. Twelve contrast scores were generated in a similar manner as in Analysis II. This time the four sets of three contrast scores (NNNN and/or NNNP; NNPP; NPPP and/or PPPP) were averaged across blocks within each specific country. The averaged mean scores of all dependent measures for country factors are reported in Table 15. In Table 16, analysis of variance results for the Combined Impression are given. A test for the linear function of the contrast scores by countries was made. A highly significant effect was found ($p < .01$). In Table 17 are presented the analysis of variance findings for the three dependent measures (General, Specific, and Applied Impressions). Finally, in Table 18 the means for the between subjects factors are given for all the four dependent measures.

TABLE 15.

Mean Scores of all Dependent Measures for Country Factors by Passage Sets of Evaluative Loading in Analysis III
(Negative Load: NNNN and/or NNNP; Positive Loed: NPPP and/or PPPP)

Dependent Measures	BRITAIN		SPAIN		JAPAN		CHINA	
	NNNN / NNNP	NPPP / PPPP	NNNN / NNNP	NPPP / PPPP	NNNN / NNNP	NPPP / PPPP	NNNN / NNNP	NPPP / PPPP
GENERAL IMPRESSION	2.4	2.0	2.6	2.4	2.3	2.0	2.8	2.5
SPECIFIC IMPRESSION	2.6	2.0	3.0	2.3	2.4	2.1	2.9	2.4
APPLIED IMPRESSION	2.1	1.8	2.6	2.4	2.4	2.1	3.1	2.9
COMBINED IMPRESSION	2.4	1.9	2.7	2.4	2.4	2.1	2.9	2.6

TABLE 16.

Analyses of Variance on Combined Measures (General, Specific, Applied Impressions)
Comparing Averaged Contrast Scores on Country Factors in Analysis III

Codes	Source	df	MS	F
	Between Subjects			
A	Reading Ability (Hig oderate)	1	18.4	6.1
B	Stated Entry Attitude (More Positive/More Negative)	1	21.8	7.2
	A x B	1	.6	<1
	N(AB)	28	3.0	
			MS(E)	
	Within Subjects			
C	Impression Measures (General/Specific/Applied)	2	1.1	5.6
	NC(AB)	56	.8	
D	Geographical Location of Countries (West:Britain,Spain/East:Japan,China)	1	1.2	5.0
E	Technological Development of Countries (Modern:Britain,Japan/Emergent:Spain,China)	1	1.6	35.0**
L	[a]Linearity of Evaluative Load Across Passage Sets (PPPP,PPPN,PPNN,PNNN,NNNN)	1	.5	46.2**
	D x C	2	.3	14.7**
	E x C	2	.4	5.4
	L x C	2	.2	11.7**
	D x A x B	1	1.2	5.9
	D x L x C	2	.2	3.2

** $p < .01$

[a]Linear polynomial and paragraph contrasts are not independent.

TABLE 17.

Analyses of Variance for General, Specific, and Applied Impression Measures for Country Factors in Analysis III

General Impression					Specific Impression				Applied Impression			
Codes	Source	df	MS	F		df	MS	F		df	MS	F
	Between Subjects				Between Subjects				Between Subjects			
A	Reading Ability (High/Moderate)	1	7.0	11.7**	A	1	9.7	8.0**	A	1	2.7	1.0
B	Stated Entry Attitude (More Positive/More Negative)	1	9.4	15.6**	B	1	5.0	4.2	B	1	7.7	2.8
	A x B	1	.8	1.4	A x B	1	2.0	1.7	A x B	1	1.1	< 1
	N(AB)	28	.6		N(AB)	28	1.2		N(AB)	28	2.8	
	Within Subjects		MS(E)		Within Subjects		MS(E)		Within Subjects		MS(E)	
D	Geographical Location of Countries (West:Britain,Spain/East:Japan,China)	1	.4	< 1	D	1	.1	< 1	D	1	14.9	15.7**
E	Technological Development of Countries (Modern:Britain,Japan/Emergent:Spain,China)	1	14.7	25.4**	E	1	9.1	19.6**	E	1	35.4	25.8**
L	[a]Linearity of Evaluative Load Across Passage Sets (PPPP,PPPN,PPNN,PNNN,NNNN)	1	5.7	20.6**	L	1	18.3	43.4**	L	1	2.2	17.5**

** $p < .01$

[a]Linear polynomial and paragraph contrasts are not independent.

TABLE 18.

Means of Dependent Measures for the Between Subjects Factors in Analysis III

Dependent Measures	READING ABILITY								STATED ENTRY ATTITUDE							
	HIGH READING ABILITY				MOD READING ABILITY				MORE POSITIVE ATTITUDE				MORE NEGATIVE ATTITUDE			
	BRIT	SPAIN	JAPAN	CHINA	BRIT	SPAIN	JAPAN	CHINA	BRIT	SPAIN	JAPAN	CHINA	BRIT	SPAIN	JAPAN	CHINA
GENERAL IMPRESSION	2.3	2.6	2.3	2.7	2.1	2.3	2.0	2.5	2.3	2.2	1.9	2.5	2.1	2.7	2.3	2.7
SPECIFIC IMPRESSION	2.4	2.9	2.4	2.7	2.3	2.4	2.2	2.4	2.3	2.4	2.1	2.5	2.3	2.9	2.4	2.7
APPLIED IMPRESSION	2.0	2.6	2.5	2.5	2.0	2.4	2.1	2.9	1.9	2.2	2.1	2.9	2.0	2.8	2.4	3.0
COMBINED IMPRESSION	2.2	2.7	2.4	2.8	2.1	2.4	2.1	2.6	2.2	2.3	2.1	2.6	2.1	2.8	2.4	2.8

BIBLIOGRAPHY

Abelson, R.P. and Rosenberg, M.J. Symbolic psycho-logic: A model of attitudinal cognition. Behavioral Science, 1953, 3, 1-13.

Altman, I. and McGinnies, E. Interpersonal perception and communication in discussion groups of varied attitudinal composition. Journal of Abnormal and Social Psychology, 1960, 60, 390-395.

Anderson, N.H. and Hovland, C.I. The representation of order effects in communication research. In C.I. Hovland (ed.) The Order of Presentation In Persuasion. New Haven: Yale University Press, 1957.

Anderson, N.H. Application of an additive model to impression formation. Science, 1962, 138, 817-818.

Anderson, N.H. and Hubert, S. Effects of concomitant verbal recall on order effects in personality impression formation. Journal of Verbal Learning and Verbal Behavior, 1963, 2, 379-391.

Anderson, N.H. Primacy effects in personality impression formation using a generalized order effects paradigm. Journal of Personality and Social Psychology, 1965a, 2, 1-9.

Anderson, N.H. Averaging versus adding as a stimulus-combination rule in impression formation. Journal of Experimental Psychology, 1965b, 70, 394-400.

Anderson, N.H. and Jacobson, A. Effect of stimulus inconsistency and discounting instructions in personality impression formation. Journal of Personality and Social Psychology, 1965, 2, 531-539.

Anderson, N.H. Averaging model analysis of set size effect in impression formation. Journal of Experimental Psychology, 1967, 75, 158-165.

Anderson, N.H. A simple model for information integration. In R.P. Abelson, K. Aronson, W.J. McGuire, T.M. Newcomb, M.J. Rosenberg, and P.H. Tannenbaum (eds.), Theories of Cognitive Consistency: A Sourcebook. Chicago: Rand McNally, 1968a.

Anderson, N.H. Application of a linear-serial model to a personality impression task using serial presentation. Journal of Personality and Social Psychology, 1968b, 10, 354-362.

Anderson, N.H. Application of a model for numerical responses to a probability learning situation. Journal of Experimental Psychology, 1969, 80, 19-27.

Anderson, N.H. Functional measurement and psychophysical judgment. Psychological Review, 1970a, 77, 153-170.

Anderson, N H. Information Integration and Attitude Change. La Jolla, California: Center for Human Information Processing, 1970b, 12.

Anderson, N.H. Information Integration Theory: A Brief Survey. La Jolla, California: Center for Human Information Processing, 1972, 24.

Anderson, N.H. Information integration theory applied to attitudes about U.S. Presidents. Journal of Educational Psychology, 1973a, 64, 1-8.

Anderson, N.H. Serial position curves in impression formation. Journal of Experimental Psychology, 1973b, 97, 1, 8-12.

Anderson, N.H., Sawyers, B.K. and Farkas, A.J. President paragraphs. Behavior Research Methods and Instrumentation, 1972.

Asch, S. The doctrine of suggestion, prestige, and imitation in social psychology. Psychological Review, 1948, 55, 250-276.

Aukerman, Robert C. Reading in the Secondary School Classroom. New York: McGraw Hill Book Company, 1972.

Baier, Kurt and Rescher, Nicholas (eds.) Values and the Future: The Impact of Technological Change on American Values. New York: MacMillan Co., 1969, 68-95.

Banks, James A. A Content Analysis of Elementary American History Textbooks: The Treatment of the Negro in Race Relations. Unpublished doctoral dissertation, Michigan State University, 1969.

Berelson, Bernard. The effects of print upon public opinion. In D. Waples (ed.) Print, Radio, and Film in a Democracy. Chicago: University of Chicago Press, 1942, 41-65.

Berelson, Bernard. Content Analysis. In Gardner Lindzey (ed.) Handbook of Social Psychology, I: Theory and Method, 1954, 488-518.

Bloom, Benjamin S., Hastings, J. Thomas, and Madaus, George F. Handbook on Formative and Summative Evaluation of Student Learning. New York: McGraw-Hill Book Company, 1971, 447-498.

Bond, A. An Experiment in the Teaching of Genetics. New York: Columbia University Press 1940.

Byrne, D., Lamberth, J., Palmer, J. and London, O. Sequential effects as a function of explicit and implicit interpolated attraction responses. Journal of Personality and Social Psychology, 1969, 13, 70-78.

Campbell, Donald T. and Stanley, Julian C. Experimental and Quasi-experimental Designs for Research. Chicago: Rand McNally & Company, 1963.

Dale, Edgar, and Chall, Jeanne S. A Formula for Predicting Readability. In C.W. Hunnicutt and William J. Iverson, Research in the Three R's. New York: Harper and Brothers, 1958, 194-213.

Edwards, Allen L. Experimental Design in Psychological Research. New York: Holt, Rinehart, and Winston, 1960, 2, 254-257.

Edwards, A.L. and Kilpatrick, F.P. Scale analysis and the measurement of social attitudes. Psychometrika, 1948, 13, 99-114.

Feather, N.T. A structural balance approach to the analysis of communication effects. In L. Berkowitz (ed.) Advances in Experimental Social Psychology. New York: Academic Press, 1967.

Feather, N.T. A structural balance model of communication effects. Psychological Review, 1964, 71, 291-313.

Fenton, Edward. The New Social Studies. New York: Holt, Rinehart, and Winston, 1967.

Festinger, L. Theory of Cognitive Dissonance. Evanston, Illinois: Row, Peterson, and Company, 1957.

Fishbein, M., and Hunter, R. Summation versus balance in attitude organization and change. Journal of Abnormal Social Psychology, 1964, 69, 505-510.

Fisher, Frank L. Influences of reading and discussion on the attitudes of fifth graders toward American Indians. Journal of Educational Research, 1968, 62, 130-134.

Fox, Thomas. The Treatment of Social Conflict in Social Studies Textbooks for Grades Three, Five, and Nine. Unpublished doctoral dissertation, Stanford University, 1972.

Fractional Factorial Experiment Designs for Factors at Two Levels. U.S. Department of Commerce, National Bureau of Standards (Applied Mathematics Series, 48), 1962.

Fry, Edward B. Readability graph validated at primary levels. Reading Teacher, 1969, 22, 534-538.

Gross, Richard E. and Muessig, Raymond H. (eds.) Problem-centered Social Studies Instruction. National Council for the Social Studies, Washinton, D.C.: Curriculum Series 14, 1971.

Gross, R.E. and Zeleny, L.D. Educating Citizens for Democracy: Curriculum and Instruction in Social Studies. New York: Oxford University Press, 1958.

Hovland, C.I. The Order of Presentation in Persuasion. New Haven: Yale University Press, 1957.

Hovland, C.I., Lumsdaine, A.A., and Sheffield, F.D. Experiments in Mass Communications: Studies in Social Psychology in World War II. Princeton: Princeton University Press, 1957.

Hovland, C.I. and Mandell, W. An experimental comparison of conclusion-drawing by the communicator and by the audience. Journal of Abnormal and Social Psychology, 1958, 56, 82-90.

Hovland, C.I. and Sherif, M. Judgmental phenomena and scales of attitude measurement; item displacement in Thurstone scales. Journal of Abnormal and Social Psychology, 1952, 47, 822-832.

Hunt, Maurice P. and Metcalf, Lawrence E. Teaching High School Social Studies: Problems in Reflective Thinking and Social Understanding. (2nd edition) New York: Harper, 1968.

Janis, I.L. and Feshbach, S. Effects of fear-arousing communications. Journal of Abnormal and Social Psychology, 1953, 48, 78-92.

Kaplan, Martin F. and Anderson, N.H. Information integration theory and reinforcement theory as approaches to interpersonal attraction. Journal of Personality and Social Psychology, 1973, 15.

Kaplan, Martin F., and Kemmerick, Gwen DeArment. Juror Judgment as Information Integration: Combining Evidential and Nonevidential Information. Unpublished manuscript, presented at Psychomonic Society meeting, St. Louis, November, 1972.

Kelley, H.H. and Volkart, E.H. The resistance to change of group-anchored attitudes. American Sociological Review, 1952, 17, 453-465.

Kelman, H.C. and Hovland, C.I. Reinstatement of the communicator in delayed measurement of opinion change. Journal of Abnormal and Social Psychology, 1953, 48, 327-335.

King, B.T and Janis, I.L. Comparison of the effectiveness of improvised versus non-improvised role-playing in producing opinion change. Human Relations, 1956, 9, 177-186.

Krug, Mark, Poster, John B., and Gillies, Wm. B. The New Social Social Studies: Analysis of Theory and Materials. Itasca, Illinois: F.E. Peacock Publishers, 1970.

Lagey, J.C. Does teaching change students' attitudes? Journal of Educational Research, 1956, 50, 307-311.

Lampel, A.K. and Anderson, N.H. Combining visual and verbal information in an impression formation task. Journal of Personality and Social Psychology, 1968, 9, 1-6.

Levin, I.T., Wall, Linda, Dolezal, J.M., and Norman, K.L. Differential weighting of positive and negative traits in impression formation as a function of prior exposure. Journal of Experimental Psychology, 1973, 97, 114-115.

Litcher, John H. and Johnson, David W. Changes in attitudes of white elementary school students after use of multiethnic readers. Journal of Educational Psychology, 1969, 60, 148-152.

Massialas, B.G., and Cox, C.B. Inquiry in Social Studies. New York: McGraw-Hill Company, 1966.

McDiarmid, Garnett, and Pratt, David. Teaching Prejudice: A Content Analysis of Social Studies Textbooks Authorized for Use in Ontario. Ontario Institute for Studies in Education, 1971.

Michaelis, J.U. and Johnston, M.S. The Social Sciences: Foundations of the Social Studies. Boston: Allyn & Bacon, 1965.

Mitnick, L.L. and McGinnies, E. Influencing ethnocentrism in small discussion groups through a film communicator. Journal of Abnormal and Social Psychology, 1958, 56, 82-90.

Morrissett, Irving. Concepts and Structure in the New Social Science Curricula. New York: Holt, Rinehart, and Winston, Ince., 1967.

National Council for the Social Studies: Curriculum Guidelines. Social Education, 1971, 35, 853-869.

Oliver, D.W. and Shaver, J.P. Teaching Public Issues in the High School. Boston: Houghton Mifflin, 1966.

Osgood, C.E. and Tannenbaum, P.H. The principle of congruity in the prediction of attitude change. Psychological Review, 1955, 62, 42-55.

Peng, Kan Chan. The Design and Analysis of Scientific Experiments. Palo Alto: Addison-Wesley, 1967.

Pratt, David. Value judgments in textbooks: the coefficient of evaluation as a quantitative measure. Interchange, 1971, 2, 1-14.

Radelfinger, S. Some Effects of Fear-arousing Communication on Preventive Health Behavior. Unpublished doctoral dissertation, Stanford University, 1963.

Raths, L.E., Harmin, M., and Simon, S.B. Values and Teaching: Working with Values in the Classroom. Columbus, Ohio: Merrill, 1966.

Rotzel, A.W. An Application of Information Integration Theory to Social Studies Materials. Unpublished manuscript, Stanford University, 1972.

Sawyer, B.K. and Anderson, N.H. Test of integration theory in attitude change. Journal of Personality and Social Psychology, 1971, 18, 230-233.

Schmidt, C.F. Personality impression formation as a function of relatedness of information and length of set. Journal of Personality and Social Psychology, 1969, 12, 6-11.

Shaftel, Fannie R., and Shaftel, George. Role-playing for Social Values: Decision Making in the Social Studies. Englewood Cliffs, New Jersey: Prentice-Hall, 1967.

Shanteau, J.C. An additive model for sequential decision-making. Journal of Experimental Psychology, 1970a, 85.

Shanteau, J.C. Component Processes in Risky Decision Judgments. Unpublished doctoral dissertation, University of California, San Diego, 1970b.

Shanteau, J.C., and Anderson, N.H. Test of a conflict model for preference judgments. Journal of Mathematical Psychology, 1969, 6, 312-325.

Sherif, M. and Hovland, C.I. Judgmental phenomena and scale of attitude measurement: placement of items with individual choice of number of categories. Journal of Abnormal and Social Psychology, 1953, 48, 135-141.

Sherif, M. and Hovland, C.I. Social Judgment: Assimilation and Contrast Effects in Communication and Attitude Change. New Haven: Yale University Press, 1961.

Sherif, C.W., Sherif, M., and Nebergall, R.E. Attitude and Attitude Change. Philadelphia: Saunders, 1965.

Sidowski, J.B., and Anderson, N.H. Judgments of city-occupations. Psychonomic Science, 1967, 7, 279-280.

Siegel, A.E., and Siegel, S. Reference groups, membership groups, and attitude change. Journal of Abnormal and Social Psychology, 1957, 55, 360-364.

Simon, Sidney B., Howe, Leland W., and Kirschenbaum, Howard. Values Clarification: A Handbook of Practical Strategies for Teachers and Students. New York: Hart Publishing Co., 1972.

Stevenson, C.M. Effects of a course in minority group relations on the attitudes of college students. Progressive Education, 1955, 32, 19-21.

Study of Elementary and Secondary Social Studies Textbooks (A). Lansing: Michigan Department of Education, 1973.

Tannenbaum, P.H. The congruity principle revisited: studies in the reduction, induction, and generalization of persuasion. In L. Berkowitz (ed.), Advances in Experimental Social Psychology, 3, New York: Academic Press, 1967.

Task Force Report and Recommendations to Reevaluate Social Science Textbooks Grades Five Through Eight. Sacramento: Bureau of Textbooks, California State Department of Education, 1971.

Weiss, D.J. and Anderson, N.H. Subjective averaging of length with serial presentation. Journal of Experimental Psychology, 1969, 82, 52-63.

Williams, R. The Resolution of Intergroup Tensions. New York: Social Science Research Council, 1948.

Winer, B.J. Statistical Principles in Experimental Design, 2, New York: McGraw-Hill, 1971.